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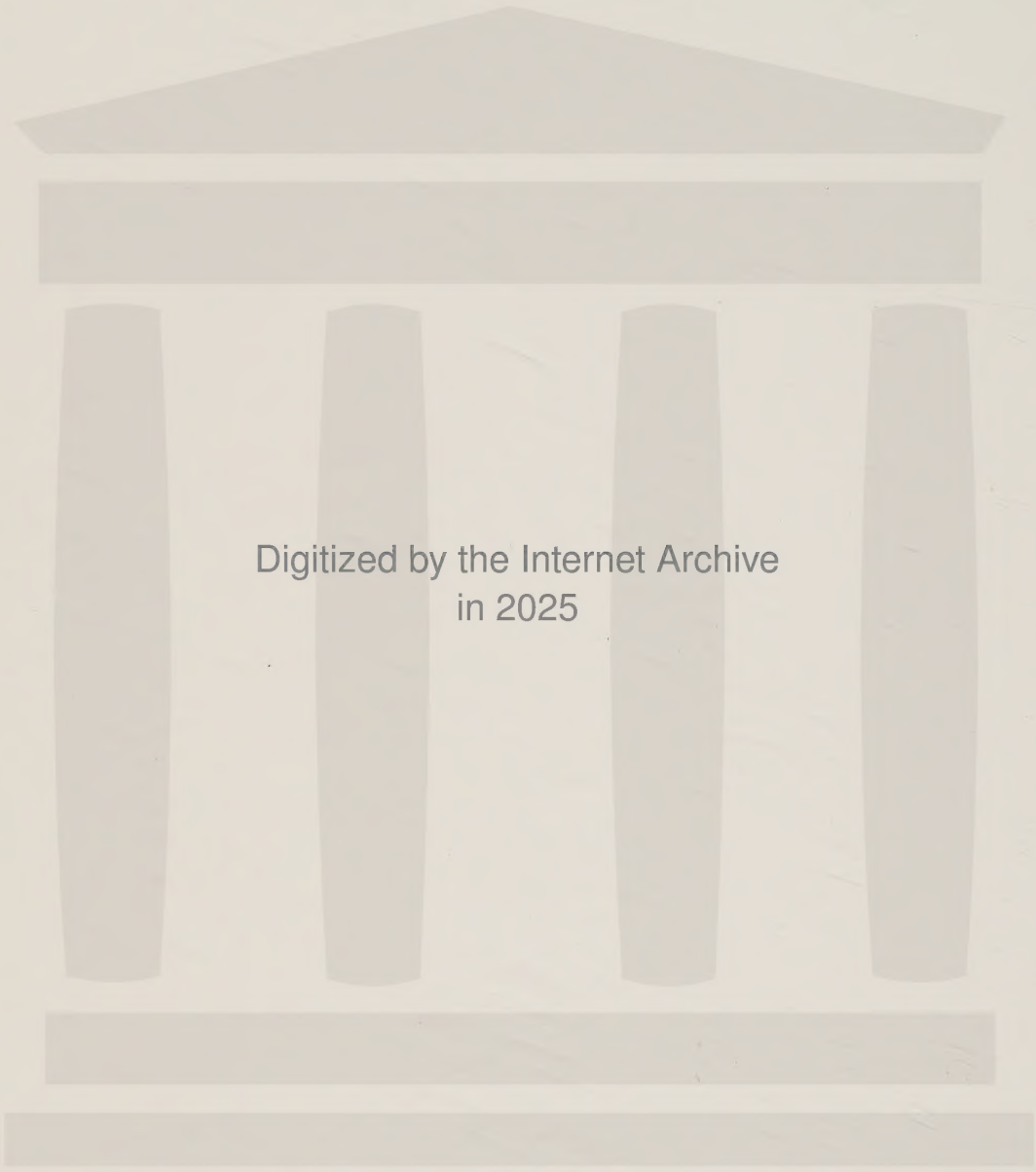
Health Statistics Quarterly

NOT TO BE TAKEN AWAY

- Trends in avoidable mortality in England and Wales, 1993–2005
- Socio-economic inequalities in smoking: an examination of generational trends in Great Britain
- Inequalities in health expectancies in England and Wales – small area analysis from the 2001 Census



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About the Office for National Statistics

The Office for National Statistics (ONS) is the Government Agency responsible for compiling, analysing and disseminating many of the United Kingdom's economic, social and demographic statistics, including the retail prices index, trade figures and labour market data, as well as the periodic census of the population and health statistics. It is also the agency that administers the statutory registration of births, marriages and deaths in England and Wales. The Director of ONS is also the National Statistician and the Registrar General for England and Wales.

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Health Statistics Quarterly and Population Trends are journals of the Office for National Statistics. Each is published four times a year in February, May, August and November and March, June, September and December, respectively. In addition to bringing together articles on a wide range of population and health topics, *Health Statistics Quarterly and Population Trends* contain regular series of tables on a wide range of subjects for which ONS is responsible, including the most recently available statistics.

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in brief

Social Trends 37

Social Trends **brings together a wide range of statistics on many aspects of contemporary UK society and how it has changed over the years. The underlying theme of *Social Trends 37* is children and young people.**

Key points about children and young people from the health chapter include:

More mothers breastfeeding

The breastfeeding of babies aged six to ten weeks in the UK increased from 62 per cent in 1990 to 76 per cent in 2005. A mother's social class, age and educational level are all strongly associated with the incidence of breastfeeding. When analysed by socio-economic classification, in 2005 the highest incidence of breastfeeding babies aged six to ten weeks in the UK was found among mothers from managerial and professional occupations, at 88 per cent. The lowest incidence of breastfeeding was found among mothers in routine and manual occupations and mothers who had never worked, both at 65 per cent.

Childhood obesity levels rising

In recent years there has been concern over the proportion of children who are obese or overweight. Between 1995 and 2005 levels of obesity among boys aged 2–15 in England increased from 11 per cent to 18 per cent, and among girls in this age group from 12 per cent to 18 per cent.

Mental health of children in low income households

There appears to be a close association between mental disorder in children and economic disadvantage in their household. Among both boys and girls the prevalence of mental disorder tends to rise as household income falls. In 2004 in Great Britain the highest prevalence was found among children who lived in a household with a gross weekly income of under £100, among whom 18 per cent of boys and 13 per cent of girls had some type of mental disorder. In contrast, children living in households with a gross weekly income of £600 or more were the least likely to experience any type of mental disorder, at around 6–7 per cent of boys and 4 per cent of girls.

Young men most likely to binge drink

In Great Britain men aged 16–24 are the most likely to binge drink (consume twice the recommended daily amount – 3 to 4 units of alcohol for men). In 2005, 30 per cent had done so on at least one day in the previous week, a slightly higher proportion than among the 25–44 age group at 25 per cent. Among women aged 16–24, 22 per cent had consumed twice the recommended daily amount on at least one day during the preceding week, twice the proportion of those in the 25–44 age group, (who were the next most likely age group to have consumed at least twice the recommended daily level).

Other health-related key points include:

More years spent in poor health

Between 1981 and 2002, healthy life expectancy at birth rose for both males and females in Great Britain, but the increases were not as great as those in overall life expectancy. In 2002 healthy life expectancy at birth was 67.2 years for males and 69.9 years for females, increases of 2.8 and 3.2 years respectively since 1981. This compares with increases of 5.1 years and 3.7 years in overall life expectancy over the same period. The result is that although people have been living longer, the number of years spent in poor health has been increasing. This was particularly apparent among males. Between 1981 and 2002 the expected number of years in poor health increased from 6.4 to 8.8 years for males, and from 10.1 to 10.6 years for females. By 2002 although females could still expect to spend more years in poor health than males, the gap between the sexes had narrowed.

Mumps notifications rising

Although mumps has historically been a childhood infection, since 2003 the number of recorded cases among those aged 15 and over showed an increase. The number of mumps notifications increased sixfold between 2003 and 2004 and more than threefold between 2004 and 2005, reaching almost 52,000 in 2005. The latter increase largely reflects lower immunity rates among older teenagers and young adults, particularly those born between 1983 and 1986 immediately before the introduction of the MMR vaccine in the UK in 1988.

Views on smoking restrictions

Under legislation in the Health Act 2006 all public places and workplaces in England will become smoke-free from 1 July 2007. In recent years public support for smoking restrictions in public places has been growing. Between 1996 and 2004 the proportion of adults in Great Britain supporting restrictions in the workplace increased from 81 per cent to 88 per cent, and were similarly high at 86 per cent in 2005. The proportion supporting restrictions in restaurants rose from 85 per cent to 91 per cent between 1996 and 2005. The largest increase was in support of restrictions in pubs, which rose from 48 per cent in 1996 to 65 per cent in 2005.

Sexual health – chlamydia diagnoses increasing

In 2005, genital chlamydia was the most common sexually transmitted infection (STI) diagnosed in genito-urinary medicine (GUM) clinics in the UK: almost 110,000 cases were

diagnosed, 5 per cent more than in 2004 and three times the number in 1996. As in previous years the highest rates of diagnoses in 2005 were among women aged 16–19, at 1,359 per 100,000, and those aged 20–24 at 1,156 per 100,000. Among men the highest rates of diagnoses were in those aged 20–24 at 1,070 per 100,000.

The report can be accessed at: www.statistics.gov.uk/socialtrends37

Social Trends 37
Palgrave Macmillan, £49.50,
ISBN 978-1-4039-9394-6

Available by calling 01256 302611 or online at www.palgrave.com/ons

New statistics on preterm births in England and Wales, 2005

In May 2007 ONS will publish for the first time, National Statistics on number of preterm babies born (before 37 weeks) using information about their gestational age. These statistics are of key importance, as preterm babies are at particular risk of morbidity and mortality in the early years of life, and the related health care needs and costs. It has not been possible to publish these data in the past, as birth statistics routinely produced by ONS are based on the information collected at birth registration and gestational age is not recorded for live births. Information about gestational age is now provided to ONS by the Central Issuing System that issues NHS numbers to babies born in England, Wales and Isle of Man. Further details will accompany the publication.

ONS Mortality Outputs Review – Consultation

On 20th April ONS launched a twelve week consultation on mortality statistics as advertised in *Health Statistics Quarterly* 33. The consultation invites interested parties to comment on proposals to change the main reporting basis for mortality outputs from deaths that occurred in a calendar to year to deaths that are registered in a calendar year. Further information including the consultation paper and how to respond can be found at the following URL

www.statistics.gov.uk/about/consultations/mortality_outputs.asp.

Responses to the consultation are invited up to 13 July. ONS intends to publish a paper evaluating the responses received to the consultation and give more details of any changes to mortality outputs later in the year.

Delay in the production of the annual report 'Death registrations in England and Wales: 2006 causes'

Unlike previous summer publications of *Health Statistics Quarterly*, this edition does not contain a report on causes of death registrations in England and Wales.

Delays in receiving 2006 registrations data from registrars mean that ONS has not been able to produce the report in time for the print deadline of this publication. However, ONS has now received these data, so plans to publish the report on the National Statistics website on 7 June as a web supplement to *Health Statistics Quarterly* 34 at the following address:

www.statistics.gov.uk/statbase/Product.asp?vlnk=6725

In addition, the delay in receiving these data means that ONS has been unable to update some of the tables within *Health Statistics Quarterly* 34 with 2006 data on death registrations. Specifically, this has affected Tables 1.1, 2.1, 2.2, 6.1, 6.2 and 6.3. It is planned that these tables will be updated and appear in the June 2007 edition of *Population Trends*.

ONS apologises for any inconvenience this causes and fully intends that the report and updated tables will be as comprehensive as previous versions.

Recent Publications

Cancer survival in England by Spearhead PCTs, 1996–2001 *(April, available at www.statistics.gov.uk/pdfdir/can0407.pdf).*

Key population and vital statistics 2005, *VS No.32, PP1 No.28 (Palgrave Macmillan, £45, April, ISBN 978-1-4039-9395-3).*

Population Trends 127 *(Palgrave Macmillan, £30, April, ISBN 978-0-230-00231-7).*

Social Trends 37 *(Palgrave Macmillan, £49.50, April, ISBN 978-1-4039-9394-6).*

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Health indicators

England and Wales

Figure A Population change (mid-year to mid-year)

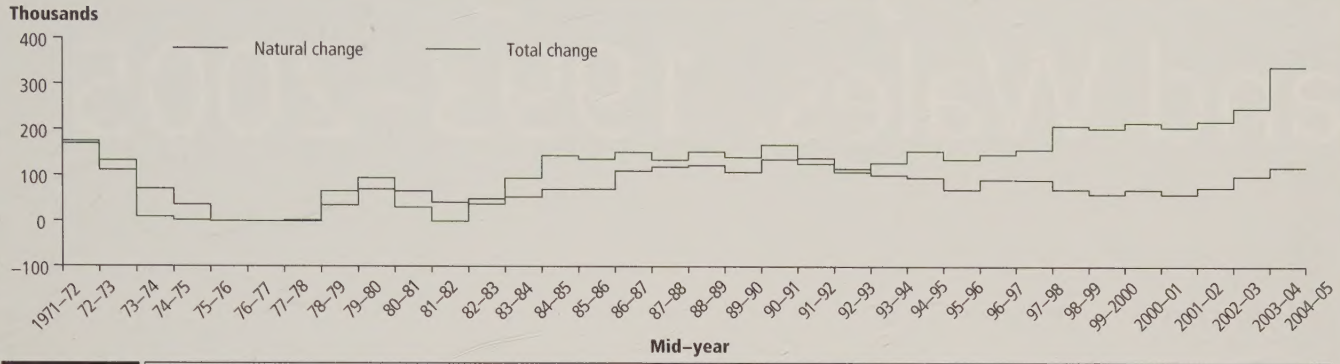


Figure B Age-standardised mortality rate[1]

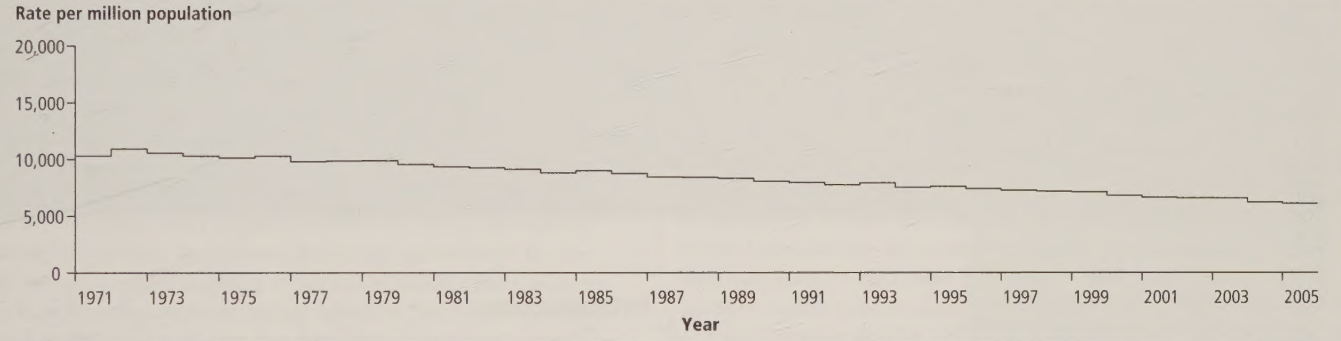


Figure C Infant mortality (under 1 year)

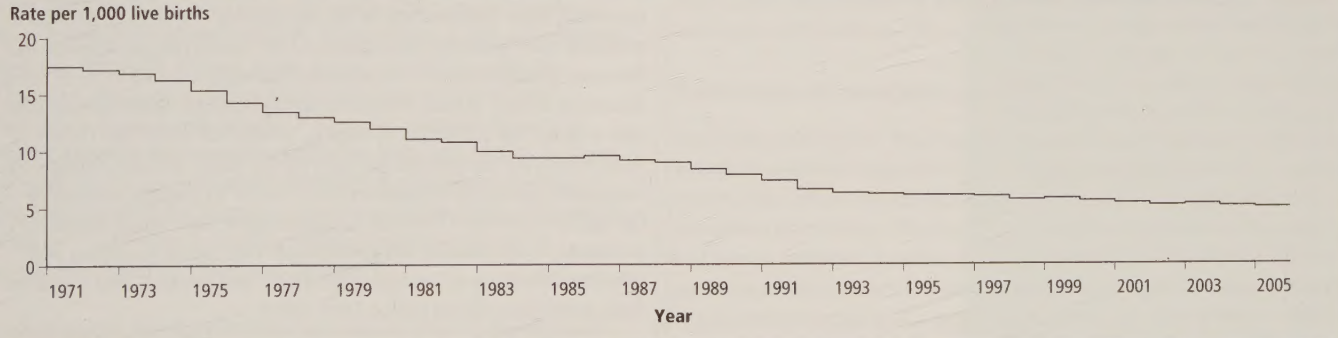
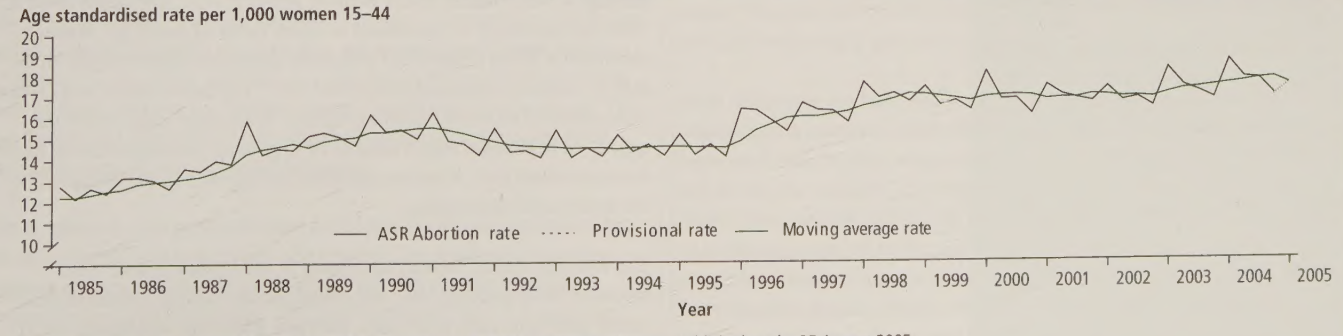


Figure D Age-standardised quarterly abortion rates – residents[2]



[1] The age-standardised mortality rate for 2004 is based on mid 2004 population estimates published on the 25 August 2005.

[2] Rates for 2004 and March quarter 2005 are based on 2004 population projections.

Trends in avoidable mortality in England and Wales, 1993–2005

Levin Wheller, Allan Baker, Clare Griffiths and Cleo Rooney
Office for National Statistics

Avoidable mortality is a major public health concern but there has been little consensus among researchers on how it should be defined and reported. In this article two definitions of avoidable mortality are considered. These are used to present trends in avoidable deaths in England and Wales from 1993 to 2005, using two statistical indicators of mortality. Analysis of both definitions shows a substantial decline in causes of mortality that are considered amenable to medical intervention over this period. This article discusses which mortality indicator is most appropriate for measuring avoidable deaths, and highlights key issues in developing a National Statistics definition of avoidable mortality.

Introduction

The need to tackle the leading causes of early death was recognised in the Government White Paper, *Saving Lives: Our Healthier Nation*,[1] where the Prime Minister, Tony Blair, noted that "Too many people die too young from illnesses which are preventable". Studies of avoidable mortality have generally been based on the underlying assumption that for some diseases there is the potential for health care services to prevent almost all deaths, at least within certain age groups. Some studies have also widened the definition of what is 'avoidable' to include causes of death which are preventable through public health policies, though not necessarily amenable to medical intervention. In general, answering the question of which illnesses are preventable, and which deaths are avoidable, is not entirely straightforward. This article examines two possible definitions of avoidable mortality, and presents data based on these definitions for the period 1993–2005.

Interest in the causes of avoidable deaths, and how this information can be used to identify potential deficiencies in health care provision, has principally been based on the work of Rutstein *et al*, published in 1976.[2] With the assistance of specialists in many fields of medicine, Rutstein published a series of tables of avoidable causes of death in order to be able to measure outcomes of medical care. Avoidable deaths and diseases were intended to act as 'warning signals' to identify areas where the quality of healthcare might need to be improved. Measurement of quality was concerned only with the outcomes, as opposed to the efficiency, of the healthcare intervention.

The Rutstein tables, though developed in the United States, were intended for worldwide use, and consequently included international health problems such as cholera. Rutstein noted that conditions listed

as avoidable/preventable would require constant surveillance because of improvements in medical knowledge and practice, as well as social and environmental changes. The original Rutstein tables were revised in 1980 to take into account medical advances and the move to the Ninth Revision of the International Classification of Diseases (ICD-9).[3]

The first work based on the Rutstein tables in England and Wales was a series of papers by Charlton *et al*.[4–6] These investigated the geographical distribution of selected causes of death in England and Wales as a means of measuring the outcomes of healthcare services. The first of the Charlton papers selected 14 causes of death that were considered amenable to medical intervention from the Rutstein tables. It also refined Rutstein's methodology by setting age limits between which deaths were considered avoidable.[4] Charlton analysed variations in deaths from conditions amenable to medical care across the then 98 health authorities in England and Wales, revealing large differences in Standardised Mortality Ratios for these causes, even after social factors had been adjusted for. A later paper by Bauer and Charlton suggested that variations in morbidity rates only partially accounted for geographical variations in avoidable mortality.[7]

Mackenbach *et al* reviewed existing European studies of avoidable mortality in 1990.[8] All of the papers considered in the review were based on the Rutstein tables, though the conditions selected and the methods of analysis differed considerably. Mackenbach suggested this inconsistency was related to a largely informal process of selection, and recommended that future studies should document reasons for selection of causes more clearly.

More recently, there has been a growing consensus that the number of conditions included in lists of avoidable mortality needs to be widened and revised. Niti *et al* argued in 2001 that developments in healthcare mean that ischaemic heart disease should be considered amenable to medical intervention.[9] In response, Westerling renewed calls for the definition of avoidable mortality to be revised, arguing that conditions need to be reviewed, and that for any definition "the avoidable factors examined should be explicitly classified and the sources of information and people responsible for the judgements presented".[10]

Though much work has been done internationally in recent decades to measure levels of avoidable mortality, there remains a lack of consensus on how this should be defined. Many lists of avoidable causes are still based on the Rutstein tables which were last revised in 1980, adding only a few selected causes.[11,12] The most recent definitions of avoidable mortality have been developed by Nolte and McKee in *Does Healthcare Save Lives? Avoidable Mortality Revisited*, and by Page, Tobias and Glover in the *Australian and New Zealand Atlas of Avoidable Mortality*.[13–15] The latter is itself an updated version of an earlier definition developed by Tobias and Jackson.[16]

The Nolte and McKee list of causes has been adopted by the National Centre for Health Outcomes Development (NCHOD) as an indicator of avoidable mortality at national and sub-national levels.[17] Both these recent lists have considerably widened the definition of what is considered avoidable. They do not however reach a consensus in defining avoidable mortality, partly because they are measuring different things. The purpose of the Nolte and McKee definition is to consider only those causes of death that can be avoided through healthcare interventions. The Page, Tobias and Glover list also considers causes of death considered preventable through public health measures.

In 2005, research into premature and avoidable deaths was examined by ONS and summarised in a review of proposals for producing mortality indicators for use in England and Wales. This was put out to public consultation between November 2005 and February 2006.[18] A summary of responses to this consultation can be found on the National Statistics website.[19] An article which analysed trends in premature mortality between 1950 and 2004 was published in 2006, and this also discussed potential options for developing a national indicator of these deaths.[20] This article presents recent trends in avoidable mortality using both the Nolte and McKee, and Page, Tobias and Glover definitions and discusses options for developing a National Statistics definition of avoidable mortality.

Methods

Mortality data

Mortality data from 1993 to 2005 were taken from the routine certification and registration of deaths in England and Wales. In 2001 ONS changed from using the Ninth Revision of the International Classification of Diseases (ICD-9) to the Tenth Revision (ICD-10). As the impact of this change was analysed in detail by ONS using a bridge coding study,[21,22] it is possible to use the results of this work to present comparable trends from 1993, giving more than ten years of data for analysis. Automated cause coding of death certificates began in 1993. The change to automated coding in 1993 was not bridge coded,[23] and hence extending the analysis prior to this date is problematic given the number of causes of death being examined.

Mortality data from 1993–2000 were coded using ICD-9, and data from 2001 to 2005 using ICD-10. The ONS bridge-coding study used data for 1999 and all deaths registered in that year were coded using both ICD-9 and ICD-10. This allows for the development of ratios to indicate the degree of comparability between the two classifications and to allow data for 1993 to 2000 to be adjusted where necessary to allow consistent comparisons to be made between the two classifications. Comparability ratios are simply the ratio of the number of deaths coded to a cause in ICD-10 to the number coded to the equivalent cause in ICD-9. Comparability ratios with 95 per cent confidence intervals have been calculated for each cause (group) in the two definitions of avoidable mortality analysed in this article (Appendix 1). Comparability ratios are only used to adjust data for 1993–2000 where there was a statistically significant difference between ICD-9 and ICD-10 for that cause of death. More information on bridge-coding and the differences between ICD-9 and ICD-10 can be found in various *Health Statistics Quarterly* articles and on the ONS website.[24–29]

Definitions of avoidable mortality

The Nolte and McKee[14] and Page, Tobias and Glover[15] definitions of avoidable mortality were selected for further analysis after a literature review. The former focuses on those causes of death considered amenable to medical intervention. These are also included in the Page, Tobias and Glover definition, however this list also includes causes that may not be amenable to medical intervention, but are considered amenable to prevention through public health measures. For example, a large proportion of deaths from lung cancer are related to smoking, and may therefore be avoided through smoking cessation. Medical intervention is however unable to prevent deaths from lung cancer in the vast majority of cases. Five-year survival for lung cancer patients diagnosed between 1998 and 2001 was only 6 per cent in men and 7 per cent in women.[30]

Both definitions we have analysed place age restrictions on the ages at which certain causes of death should be considered avoidable. Deaths between 0 and 74 years were considered avoidable for most causes, but not for all. For example, the Page, Tobias and Glover definition lists deaths from chronic obstructive pulmonary disease (COPD) as avoidable only between ages 45 to 74, and deaths from asthma only under age 45 as avoidable. Deaths from intestinal infectious diseases and whooping cough were considered as avoidable only before age 15 in the Nolte and McKee list. For consistency, all analysis presented in this article is for deaths

Box one

Avoidable Mortality definitions used in this article

1. **Amenable mortality** – deaths occurring before age 75 from causes that are considered amenable to medical intervention. Examples include: breast cancer, cancer of colon and rectum, leukaemia, gastric and duodenal ulcer, and hypertensive diseases. Deaths from these causes may be avoidable through treatment of the condition after onset.
2. **Preventable mortality** – deaths occurring before age 75 from causes that are considered to be preventable through (a) individual behaviour, and/ or (b) public health measures limiting individual exposure to harmful substances/conditions (e.g. through things such as social interventions or immunisation programmes). Examples include: lung cancer, illicit drug use disorders, land transport accidents, and Hepatitis B. Deaths from these causes are avoidable through prevention of the disease, or external event, occurring altogether.
3. **Unavoidable mortality** – deaths occurring before age 75 from causes that are considered both (a) not amenable to medical intervention and (b) not preventable through changes in individual behaviour/public health measures. Examples include cancers of the pancreas, ovary, and prostate.

between ages 0 and 74 for each cause of death. The selection of this age range is discussed in the results and discussion sections of this article. Box One presents the definitions of avoidable mortality used in the article.

Adaptations to the lists

A number of small changes have been made to both definitions of avoidable mortality analysed in this article, to ensure consistency with other ONS outputs and the conventions used for coding cause of death in England and Wales. The Page, Tobias and Glover list defines half of all deaths caused by ischaemic heart disease (IHD), cerebrovascular disease, and diabetes mellitus as amenable to medical care, with the other half considered preventable through public health measures. In this paper these causes have not been split across categories in this way. Improvements in medical science and new treatments may change the proportion of deaths avoidable through medical intervention and public health measures over time. Consequently, while recognising the role of public health initiatives and individual behaviour in preventing illnesses such as IHD, we have chosen to include all IHD, cerebrovascular disease and diabetes deaths in the 'amenable to medical care' category for consistency over time.

The definition of alcohol-related deaths used by Page, Tobias and Glover has been changed to match the National Statistics definition of these deaths.[31] Alcohol-related deaths are split into alcohol-related diseases, with those deaths not caused by disease placed into the relevant external cause category (e.g. accidental poisoning, suicide). Billiary cirrhosis, which is not part of the National Statistics definition, has been removed from the adapted list. The ICD codes for deep vein thrombosis and/or pulmonary embolism have been updated to the ONS standard group of codes for these conditions.[28] Viral pneumonia and influenza, included as a single cause by Page, Tobias and Glover are now listed as separate causes. Deaths from 'fracture, cause unspecified' has been added to the selection of accidents included in the Page, Tobias and Glover list, because many deaths from this cause are thought to be due to accidental falls.[32]

'Birth defects' have been renamed 'congenital malformations, deformations and chromosomal anomalies' and this entire ICD chapter (Q00–Q99) replaces the original codes used by Page, Tobias and Glover. 'Complications of the perinatal period' now also includes the entire ICD chapter (P00–P96). Because ONS uses the World Health Organisation (WHO) recommended medical certificate of cause of death for deaths occurring in the first 27 days of life (neonatal deaths), these deaths cannot be assigned an underlying cause.[33] These deaths make up the majority of infant deaths in England and Wales, and, if they had an underlying cause, would generally be included in either of these two ICD chapters. Because selection of deaths as avoidable or not for this analysis is based on the underlying cause of death, these neonatal deaths cannot, however, be included. We have consequently presented them separately in Appendix 1. The figures presented for congenital malformations and complications of the perinatal period are therefore underestimates of the true contribution of these causes to mortality.

After making these limited adaptations, the Nolte and McKee definition of avoidable mortality includes 34 causes of death which are all considered amenable to medical intervention (see Appendix 1). The Page, Tobias and Glover definition includes 49 causes, 27 of which are considered amenable to medical care and 22 of which are preventable (see Appendix 1). For the analyses in this paper we have formally split these two sets of causes into separate lists of (a) amenable causes and (b) preventable causes. The Page, Tobias and Glover definition also includes a list of 14 avoidable mortality conditions "excluded from analysis".[15] These causes were excluded from their analysis on the basis that they represented less than 0.1 per cent of deaths over a three- or four-year period in Australia and New Zealand respectively. These causes have not been included in the Page, Tobias and Glover definition used in this article.

Mortality indicators

Mid-year population estimates were used with the deaths data to calculate age-standardised mortality rates and years of life lost (Box Two) for males and females separately for deaths under 75 years of age. Population estimates from 1993 to 2005 are available on the National Statistics website and include revisions and corrections made following the 2001 Census.[34]

Box two

Mortality indicators

1. **Directly age-standardised mortality rates** – These make allowances for differences in the age structure of populations. The directly age-standardised rate for a particular population is that which would have occurred if its observed age-specific rates had applied in a given standard population. Rates in this article were age-standardised using the European Standard Population. This is a hypothetical population standard, which is the same for both males and females, allowing standardised rates to be compared over time and between sexes. Age-standardised mortality rates are presented per 100,000 population.
2. **Standardised years of life lost** – A measure of prematurity in which deaths at younger ages are weighted more heavily than deaths at older ages. For this analysis deaths were considered to be evenly distributed between birthdays, therefore each death was assumed to occur mid-way between birthdays. When considering age 75 to represent the threshold for avoidable mortality, a death at age 70 thus contributes 4.5 years to the total count of potential years of life lost. A death at age 15 however would contribute 59.5 years of life lost. The total years of life lost in a population is equal to the sum of years of life lost to all individuals who died prematurely. In this article potential years of life lost (PYLL) are expressed as age-standardised rates (standardised years of life lost, SYLL). These rates represent the number of potential years of life lost if the population of England and Wales had the same population structure as the European Standard Population. Standardised years of life lost rates are presented as years of life lost per 10,000 population.

Results

The majority of deaths in England and Wales now occur to people aged 75 and over. In 2005, 57 per cent of male and 74 per cent of female deaths occurred after age 74. As the analysis in this article is intended to complement our previous work on premature mortality, these deaths have not been considered avoidable.[20] This decision is also consistent with both definitions we have examined. All further analysis in this article relates only to deaths occurring before 75 years of age.

Based on the Nolte and McKee definition of avoidable mortality, 43 per cent of male and 47 per cent of female deaths before age 75 were considered avoidable in 2005. A higher proportion of deaths are considered avoidable based on the Page, Tobias and Glover definition due to the inclusion of preventable mortality in this list. Overall, 71 per cent of male and 67 per cent of female deaths under age 75 were considered avoidable using this definition. The distribution of avoidable mortality between the amenable and preventable categories differs for males and females. Among males, almost the same proportion of deaths were considered amenable to healthcare (36 per cent) as preventable (35 per cent). For females, 39 per cent of deaths were considered amenable to medical care in 2005, with 28 per cent considered preventable.

Age-standardised mortality rates reveal more clearly the differences between the two definitions of avoidable mortality (Figure 1). All the age-standardised rates presented refer to deaths before 75 years of age. The all-cause mortality rate in 2005 was 371 per 100,000 population for males and 233 for females. According to the Nolte and McKee definition, the rate for all avoidable causes of death was 156 for males and 106 for females. The total avoidable mortality rate was higher using the Page, Tobias and Glover definition, at 264 and 155 per 100,000 for males and females respectively. The inclusion of preventable conditions largely accounts for this difference. In 2005, the mortality rates from conditions defined as amenable to medical intervention by Page, Tobias and Glover was 132 per 100,000 population for males compared with 90 per 100,000 population for females. The difference between males and females was even bigger for preventable causes. In 2005, the rate among males (131 per 100,000) was almost twice that of females (66 per 100,000) for preventable causes.

Leading causes of avoidable mortality in 2005

As expected, some causes contribute more to avoidable mortality than others and there are a number of ways to measure the contribution of different causes. We present the ten leading causes of avoidable mortality measured by both age-standardised mortality rates and standardised years of life lost (SYLL) rates in Tables 1a, 1b, and 1c. Both age-standardised mortality rates and SYLL rates are presented for all causes in both lists in Appendix 2. Leading causes on the Nolte and McKee list (Table 1a) and the Page, Tobias and Glover list of amenable causes (Table 1b) should be comparable as causes on both lists are considered to be amenable to medical intervention. Differences between the definitions are discussed later in the article.

Regardless of the mortality indicator used, ischaemic heart disease (IHD) was by far the largest contributor to amenable mortality for males on both definitions we are examining. The picture is slightly more complex for females, where IHD was the largest contributor to avoidable mortality based on age-standardised rates, but breast cancer was the largest contributor when standardised years of life lost were used. This indicates that, although mortality from both IHD and breast cancer increase with age, significant numbers of deaths from breast cancer begin to appear in women at younger ages than IHD.

Using the Nolte and McKee definition, the top five causes of avoidable mortality among males remain constant, and stay in the same order, regardless of the indicator of mortality that was used. The three leading causes of avoidable mortality among males are also constant and remain in the same order regardless of the indicator used in the Page, Tobias and Glover list of amenable conditions. Among females, the six leading causes of death are the same for each mortality indicator based on the Nolte and McKee list, though they do not always appear in the same order. This only applies to the three leading amenable causes in the Page, Tobias and Glover list.

The age-standardised mortality rate for IHD among males was more than three times higher than that of the second highest cause of avoidable mortality on both the Nolte and McKee and Page, Tobias and Glover lists. For females, the rate for IHD (23 deaths per 100,000 population) was only slightly higher than that for breast cancer (21 per 100,000). Using the Nolte and McKee definition, almost half (47 per cent) of the total male death rate for avoidable mortality (156 per 100,000) was the result of IHD (73 per 100,000) in 2005. Among females, just over a fifth (22 per cent) of the total avoidable mortality rate (106 per 100,000) was the result of IHD (23 per 100,000). Breast cancer accounts for a similar proportion of the total mortality rate among females.

Figure 1 Age-standardised mortality rates: by avoidability criteria, ages 0–74, 2005

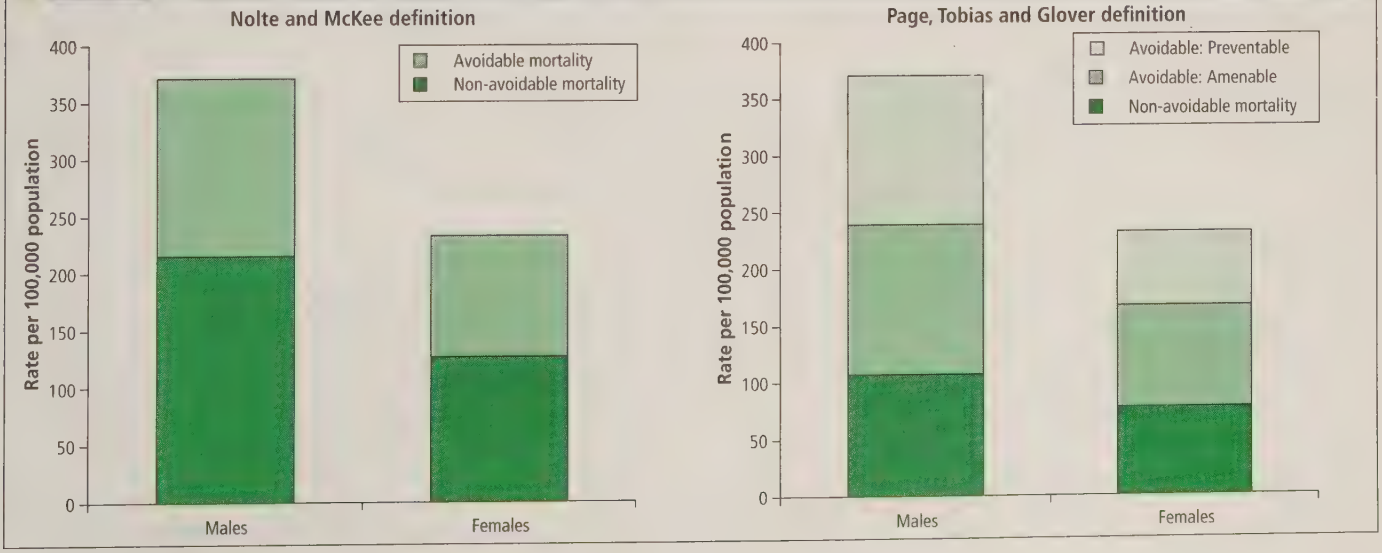


Figure 2a Age-standardised mortality rates: by avoidability criteria, Nolte and McKee definition, 1993–2005

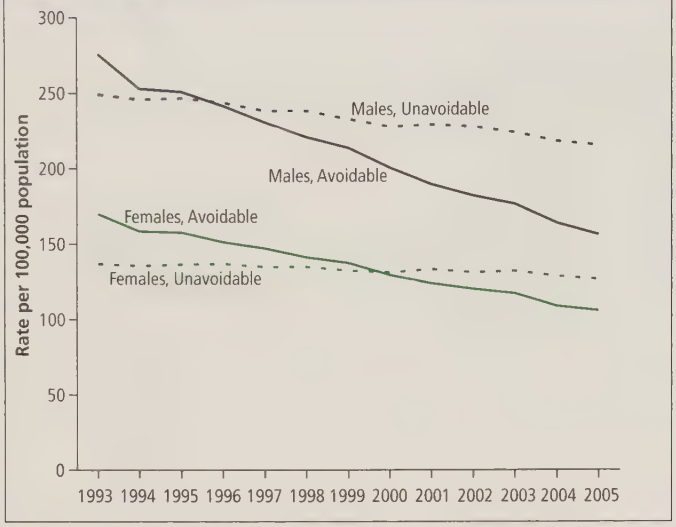
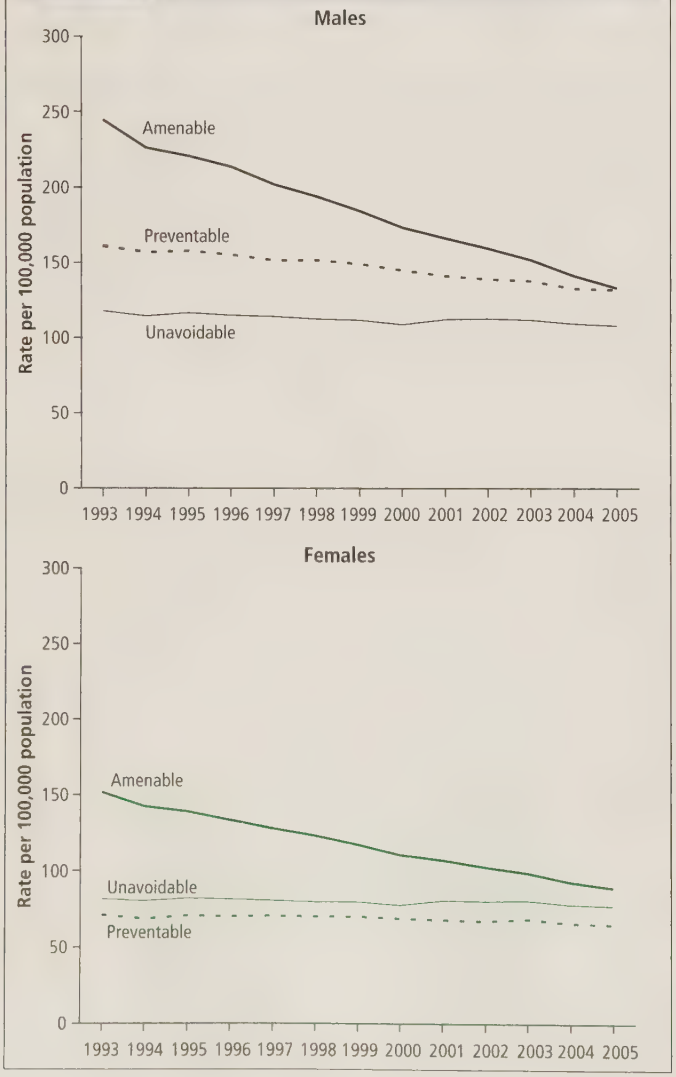


Figure 2b Age-standardised mortality rates: by avoidability criteria, Page, Tobias and Glover definition, 1993–2005



The leading preventable causes of death from the Page, Tobias and Glover list were mainly related to smoking and drinking (Table 1c). Using age-standardised mortality rates as our indicator, lung cancer (malignant neoplasm of trachea, bronchus and lung) was the biggest preventable cause of death in 2005 for both males and females. Chronic obstructive pulmonary disease, also associated with smoking, was the second largest avoidable cause of death for females and the third largest cause for males, based on age-standardised rates. Alcohol-related diseases were the second and third largest cause of preventable mortality for males and females respectively.

Suicide and self-inflicted injuries were the biggest cause of preventable mortality among men when standardised years of life lost were used as the indicator. Lung cancer remained the main cause for females, though suicide moved from being the fifth largest cause based on mortality rates to the third based on years of life lost rates. The years of life lost rate for suicide among males (38 years per 10,000 population) was more than three times higher than for females (12 years per 10,000 population). This is expected as it is well established that male suicide rates are higher than those of females at younger ages.[35,36] Land transport accidents also ranked higher when avoidable mortality was measured by standardised years of life lost rather than age-standardised mortality rates.

Trends in avoidable mortality, 1993–2005

There have been considerable reductions in levels of avoidable mortality between 1993 and 2005 (Figure 2). Between 1993 and 2005, age-standardised mortality rates decreased for all of the five leading causes of avoidable mortality on both the Nolte and McKee, and Page, Tobias and Glover lists of causes amenable to medical care, except for cancer of corpus uteri and uterus unspecified, where there was a very small increase (Figures 3 and 4). The trends in age-standardised mortality rates identified among the top causes in both definitions were similar to those seen when using standardised years of life lost as an indicator. Consequently, only trends in age-standardised mortality rates are presented. SYLL rates are given in Appendix 3.

Measured by the Nolte and McKee definition, the age-standardised mortality rate for all causes considered amenable to medical intervention decreased by around two-fifths for both males (43 per cent) and females (38 per cent) between 1993 and 2005 (Figure 2a). Mortality from all causes not considered avoidable by Nolte and McKee decreased by 14 per cent and 8 per cent for males and females respectively over the same period. A similar pattern was seen when using the Page, Tobias and Glover definition (Figure 2b). Between 1993 and 2005, mortality from amenable causes decreased by 46 per cent and 41 per cent for males and females respectively. Mortality from preventable causes decreased by 18 per cent for males and 8 per cent for females. Mortality from causes considered to be unavoidable by Page, Tobias and Glover decreased by only 9 per cent among males and 5 per cent among females. Results from both lists indicate that decreases in mortality from avoidable causes are unlikely to simply be the result of a general decrease in mortality rates. Medical interventions are likely to have contributed positively to reductions in avoidable mortality, as are public health initiatives, though perhaps to a lesser extent.

By far the largest decrease in age-standardised mortality rates among the leading causes of avoidable death occurred in IHD. Rates fell sharply between 1993 and 2005, decreasing by 54 and 59 per cent among males and females respectively (Figures 3a, 3b, 4a, 4b). In 1993, based on the Nolte and McKee definition, 58 per cent of avoidable mortality in males and 33 per cent of avoidable mortality in females was caused by IHD. By 2005, the contribution of IHD to deaths from amenable causes had decreased to 47 per cent among males and 22 per cent among females. Other major causes of avoidable mortality saw large decreases between 1993 and 2005. The rate for deaths from cerebrovascular diseases

Table 1a Leading causes of avoidable mortality, 2005

Nolte and McKee definition; ages 0–74: Age-standardised mortality rates

	Males			Females	
Rank	Cause	Rate per 100,000 population	Rank	Cause	Rate per 100,000 population
1	Ischaemic heart disease	72.7	1	Ischaemic heart disease	23.2
2	All respiratory diseases (excluding pneumonia and influenza)	22.2	2	Malignant neoplasm of breast	20.8
3	Cerebrovascular disease	17.7	3	All respiratory diseases (excluding pneumonia and influenza)	15.4
4	Malignant neoplasm of colon and rectum	13.2	4	Cerebrovascular disease	13.4
5	Pneumonia	8.2	5	Malignant neoplasm of colon and rectum	8.2
6	Leukaemia	4.0	6	Pneumonia	5.3
7	Diabetes mellitus	3.7	7	Malignant neoplasm of corpus uteri and uterus unspecified	2.5
8	Gastric and duodenal ulcer	2.3	8	Leukaemia	2.4
9	Hypertensive disease	2.3	9	Diabetes mellitus	2.3
10	Epilepsy and status epilepticus	1.9	10	Malignant neoplasm of cervix uteri	2.1

Nolte and McKee defintion; ages 0–74: Standardised years of life lost

Rank	Cause	Rate per 10,000 population years	Rank	Cause	Rate per 10,000 population years
1	Ischaemic heart disease	69.6	1	Malignant neoplasm of breast	30.5
2	All respiratory diseases (excluding pneumonia and influenza)	18.4	2	Ischaemic heart disease	17.3
3	Cerebrovascular disease	16.9	3	Cerebrovascular disease	13.2
4	Malignant neoplasm of colon and rectum	11.8	4	All respiratory diseases (excluding pneumonia and influenza)	12.6
5	Pneumonia	9.3	5	Malignant neoplasm of colon and rectum	8.0
6	Epilepsy and status epilepticus	6.0	6	Pneumonia	5.9
7	Leukaemia	5.5	7	Leukaemia	4.3
8	Congenital malformations of the circulatory system	5.2	8	Congenital malformations of the circulatory system	4.2
9	Perinatal deaths, all causes, excluding stillbirths	4.2	9	Malignant neoplasm of cervix uteri	4.2
10	Diabetes mellitus	4.2	10	Epilepsy and status epilepticus	3.6

Table 1b Leading causes of amenable mortality, 2005

Page, Tobias and Glover definition; ages 0–74: Age-standardised mortality rates

Rank	Cause	Rate per 100,000 population	Rank	Cause	Rate per 100,000 population
1	Ischaemic heart disease	72.7	1	Ischaemic heart disease	23.2
2	Cerebrovascular disease	17.7	2	Malignant neoplasms of breast	20.8
3	Malignant neoplasm of colon and rectum	13.2	3	Cerebrovascular disease	13.4
4	Diabetes mellitus	3.7	4	Malignant neoplasm of colon and rectum	8.2
5	Malignant neoplasm of bladder	3.5	5	Malignant neoplasm of corpus uteri and uterus unspecified	2.5
6	Congenital malformations, deformations and chromosomal anomalies	2.5	6	Diabetes mellitus	2.3
7	Gastric and duodenal ulcer	2.3	7	Malignant neoplasm of cervix uteri	2.1
8	Hypertensive disease	2.3	8	Congenital malformations, deformations and chromosomal anomalies	2.0
9	Selected invasive bacterial and protozoal infection	2.3	9	Selected invasive bacterial and protozoal infection	1.7
10	Malignant melanoma of skin	2.1	10	Malignant melanoma of skin	1.6

Page, Tobias and Glover defintion; ages 0–74: Standardised years of life lost

Rank	Cause	Rate per 10,000 population years	Rank	Cause	Rate per 10,000 population years
1	Ischaemic heart disease	69.6	1	Malignant neoplasms of breast	30.5
2	Cerebrovascular disease	16.9	2	Ischaemic heart disease	17.3
3	Malignant neoplasm of colon and rectum	11.8	3	Cerebrovascular disease	13.2
4	Congenital malformations, deformations and chromosomal anomalies	11.2	4	Congenital malformations, deformations and chromosomal anomalies	9.2
5	Epilepsy and status epilepticus	6.0	5	Malignant neoplasm of colon and rectum	8.0
6	Selected invasive bacterial and protozoal infection	5.5	6	Malignant neoplasm of cervix uteri	4.2
7	Complications of perinatal period	4.2	7	Selected invasive bacterial and protozoal infection	3.7
8	Diabetes mellitus	4.2	8	Epilepsy and status epilepticus	3.6
9	Malignant melanoma of skin	3.2	9	Complications of perinatal period	3.1
10	Hypertensive disease	2.7	10	Malignant melanoma of skin	2.8

Table 1c Leading causes of preventable mortality, 2005

Page, Tobias and Glover definition; ages 0–74: Age-standardised mortality rates

Rank	Cause	Rate per 100,000 population	Rank	Cause	Rate per 100,000 population
1	Malignant neoplasm of trachea, bronchus and lung	31.9	1	Malignant neoplasm of trachea, bronchus and lung	19.6
2	Alcohol-related diseases, excluding external causes	14.4	2	Chronic obstructive pulmonary disease	10.3
3	Chronic obstructive pulmonary disease	14.4	3	Alcohol-related diseases, excluding external causes	6.7
4	Suicide and self inflicted injuries	12.1	4	Pneumonia	5.3
5	Malignant neoplasm of oesophagus	8.7	5	Suicide and self inflicted injuries	4.1
6	Pneumonia	8.2	6	Deep vein thrombosis with pulmonary embolism	3.7
7	Land transport accidents	7.9	7	Malignant neoplasm of oesophagus	2.7
8	Aortic aneurysm and dissection	6.1	8	Malignant neoplasm of stomach	2.1
9	Malignant neoplasm of stomach	5.2	9	Land transport accidents	2.0
10	Deep vein thrombosis with pulmonary embolism	4.2	10	Aortic aneurysm and dissection	1.9

Page, Tobias and Glover defintion; ages 0–74: Standardised years of life lost

Rank	Cause	Rate per 10,000 population years	Rank	Cause	Rate per 10,000 population years
1	Suicide and self inflicted injuries	38.0	1	Malignant neoplasm of trachea, bronchus and lung	17.9
2	Land transport accidents	31.5	2	Alcohol-related diseases, excluding external causes	13.1
3	Alcohol-related diseases, excluding external causes	27.4	3	Suicide and self inflicted injuries	12.2
4	Malignant neoplasm of trachea, bronchus and lung	27.0	4	Land transport accidents	7.5
5	Illicit drug use disorders	10.6	5	Chronic obstructive pulmonary disease	6.3
6	Pneumonia	9.3	6	Pneumonia	5.9
7	Chronic obstructive pulmonary disease	9.1	7	Deep vein thrombosis with pulmonary embolism	4.6
8	Accidental poisonings	8.9	8	Homicide/ assault	3.6
9	Homicide/ assault	8.9	9	Accidental poisonings	3.4
10	Malignant neoplasm of oesophagus	8.7	10	Malignant neoplasm of oesophagus	2.5

Figure 3a Age-standardised mortality rates for the top five avoidable causes of death: Nolte and McKee definition, males aged 0–74, 1993–2005

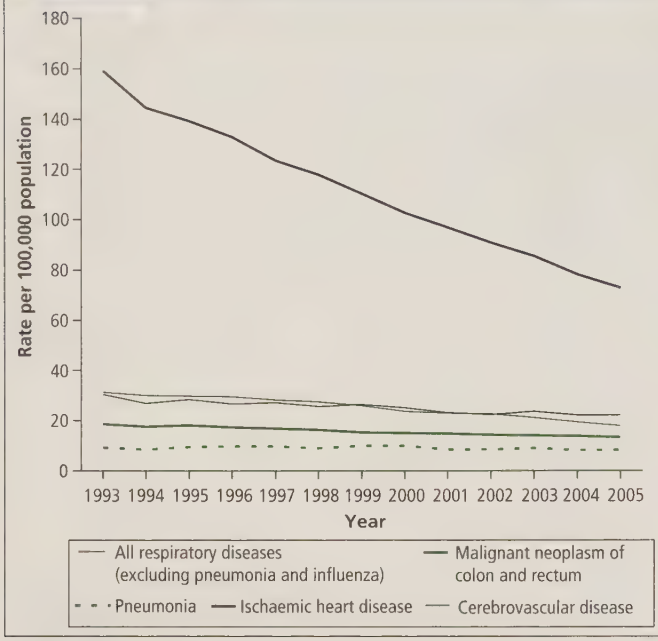


Figure 4a Age-standardised mortality rates for the top five amenable causes: Page, Tobias and Glover definition, males aged 0–74, 1993–2005

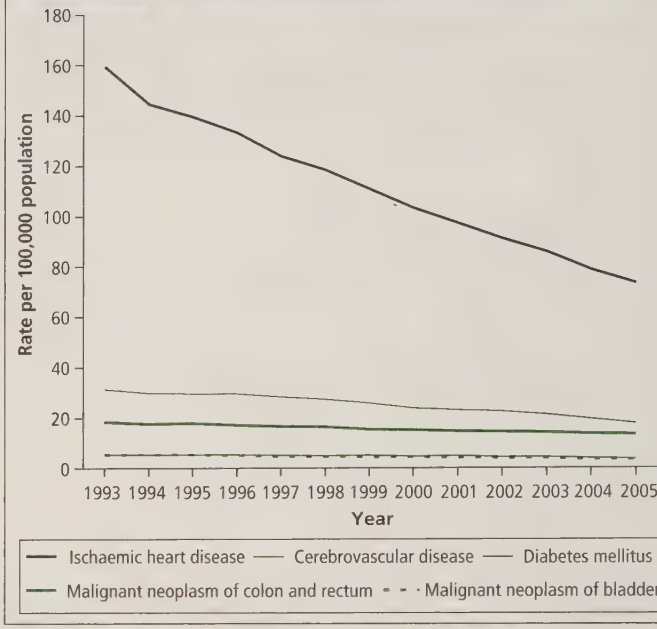


Figure 3b Age-standardised mortality rates for the top five avoidable causes of death: Nolte and McKee definition, females aged 0–74, 1993–2005

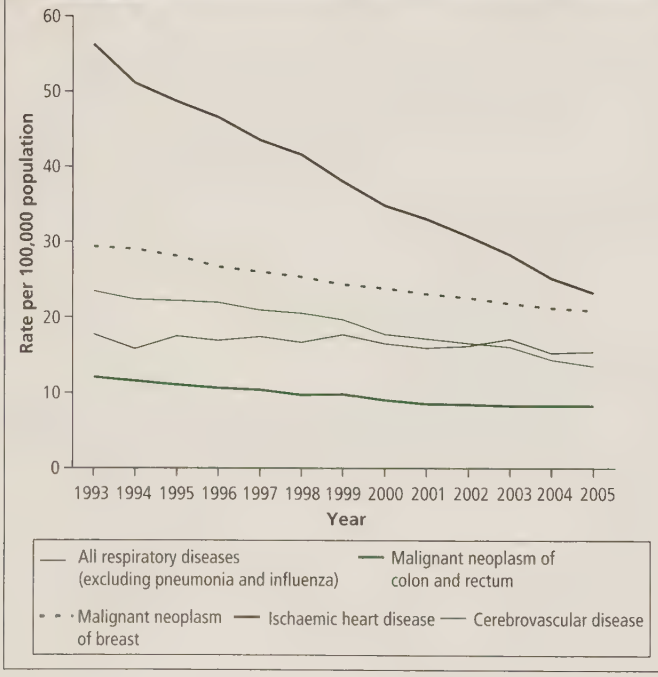
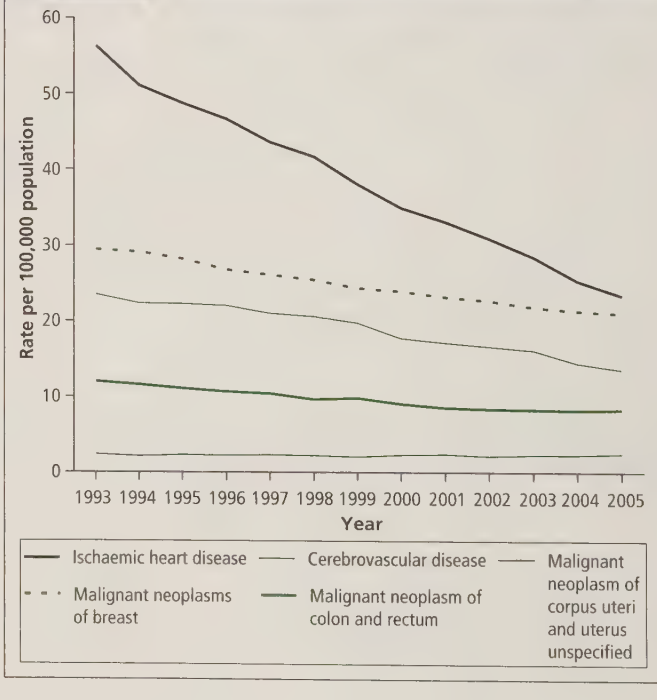


Figure 4b Age-standardised mortality rates for the top five amenable causes: Page, Tobias and Glover definition, females aged 0–74, 1993–2005



also decreased substantially, falling by more than two-fifths for both males (44 per cent) and females (43 per cent) between 1993 and 2005. Mortality rates for colorectal cancer also declined through the period by 28 per cent for males and 32 per cent for females.

The two other leading avoidable causes on the Nolte and McKee list among males were 'all respiratory diseases excluding pneumonia and influenza' and pneumonia itself. Among females, breast cancer and 'all respiratory diseases excluding pneumonia and influenza' complete the five leading causes. The rate for 'all respiratory diseases' decreased steadily among males over the period, falling by over a quarter (27 per cent). Amongst females a more complex pattern appears for this cause, with the rate per 100,000 population fluctuating between 15 and 18 across the entire period, suggesting no clear trend. Pneumonia in males followed a similar pattern, with rates fluctuating between 8 and 10 per 100,000 population across the entire period with no consistent trend. Rates of female breast cancer decreased by around a third (29 per cent) across the entire period.

Leading (top 5) amenable causes identified by the Page, Tobias and Glover definition also decreased among males between 1993 and 2005 (Figures 4a and 4b). Rates for diabetes and cancer of the bladder decreased by 32 and 37 per cent respectively. Rates of death from cancer of the uterus (corpus uteri and uterus unspecified) in females stayed fairly constant over the entire period.

Four of the five leading causes of preventable mortality were the same for males and females when measured using age-standardised death rates. Lung cancer was the leading cause of preventable mortality for both males and females in every year since 1993. Mortality rates for lung cancer were higher among males than females in all years, however bigger reductions have occurred in male mortality rates since 1993 (Figure 5). Between 1993 and 2005, rates decreased by 37 per cent among males, compared with 11 per cent among females.

A similar pattern was seen with another smoking-related cause of death, chronic obstructive pulmonary disease (COPD). Though rates among females were lower than for males in all years, male rates have declined more steeply, by a total of two-fifths (39 per cent) since 1993. In 2005, the male rate for deaths from COPD to those aged under 75 was only very slightly higher than the rate for females in 1993. Over the whole period, female rates for COPD decreased by a fifth (22 per cent).

Deaths from alcohol-related diseases have increased considerably since 1993, and this has been reported previously by ONS.[37] Alcohol-related diseases ranked ninth for males and fifth for females among the leading causes of preventable mortality in 1993. By 2005, alcohol-related diseases ranked second for males and third for females. Mortality rates from alcohol-related diseases almost doubled among males (99 per cent increase) and have increased by around two-fifths (67 per cent) in females since 1993.

Suicide and self-inflicted injuries were the fourth largest cause of preventable mortality in 2005 among males, and the fifth largest among females. Across the period, male rates declined by 14 per cent, initially falling slowly, before peaking in 1998, then falling more rapidly after this point. Among females the rate was fairly constant over the entire period, declining by a total of only 8 per cent. The male suicide rate was around three times that for females in each year between 1993 and 2005.

Discussion

Trends in avoidable mortality

Mortality from avoidable causes has decreased substantially since 1993 for both males and females. This was true whichever mortality indicator was used for analysis. Circulatory diseases and cancers were the major causes of avoidable mortality amenable to medical intervention. IHD was the largest cause of avoidable mortality amenable to medical intervention in every year between 1993 and 2005 for both males and females. Mortality rates from IHD have decreased substantially over this period, and the proportion of all avoidable deaths caused by IHD also decreased. Despite the large reduction in rates, IHD remained the largest avoidable cause of death for males and females in 2005.

Smoking-related diseases (lung cancer and COPD) and alcohol-related diseases were the major causes of preventable deaths in both males and females between 1993 and 2005. Alcohol-related diseases recorded one of the most notable increases of all causes between 1993 and 2005, while smoking-related mortality decreased over this period. Compared to the considerable decrease in mortality from causes amenable to medical intervention, mortality from causes considered to be unavoidable decreased only modestly between 1993 and 2005. This suggests that medical interventions have contributed positively in the reduction of avoidable mortality over this period.

Figure 5a Age-standardised mortality rates, top five causes of preventable mortality: Page, Tobias and Glover definition, males 0–74 years, 1993–2005

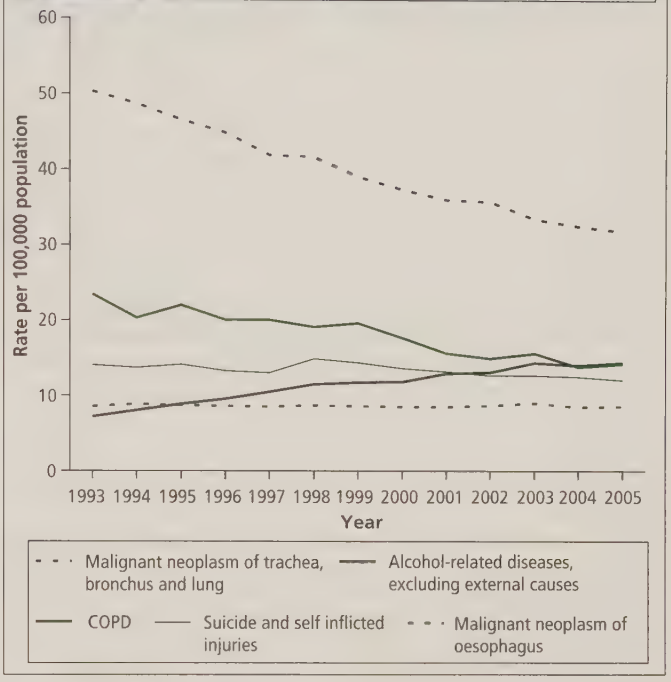
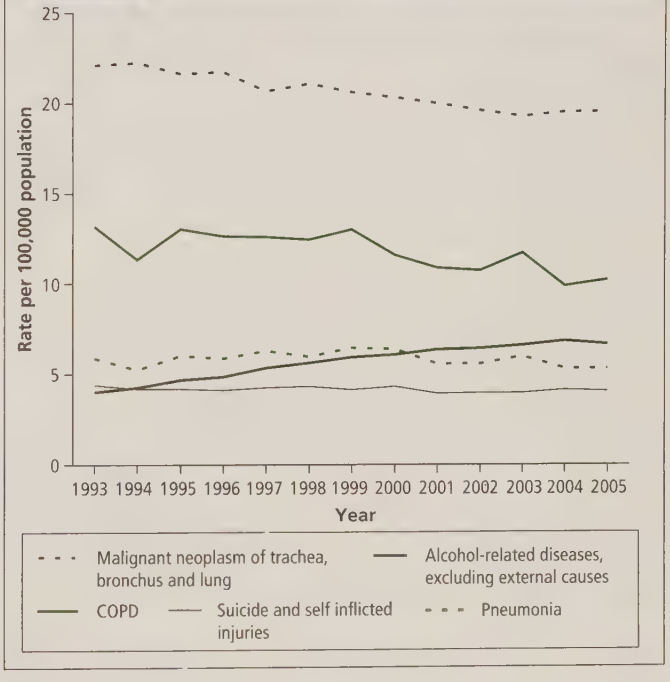


Figure 5b Age-standardised mortality rates, top five causes of preventable mortality: Page, Tobias and Glover definition, females 0–74 years, 1993–2005



Selection of causes considered avoidable

A small number of changes were made to the Page, Tobias and Glover and Nolte and McKee lists of causes before analysis was undertaken. These adaptations are documented in the methods section above. Our changes to the lists were generally made to ensure consistency with other ONS mortality outputs and England and Wales mortality coding conventions.

The Nolte and McKee, and Page, Tobias and Glover definitions differ from each other in a number of ways. In general, the latter goes to a finer level of detail than that used by Nolte and McKee. There is only limited consensus between the lists over which infections should be included in a definition of avoidable mortality. Meningococcal infections, and meningitis more generally, were not included by Nolte and McKee, but were in the Page, Tobias and Glover list. Intestinal infections included by Nolte and McKee were not in the main Page, Tobias and Glover list, instead they were labelled 'diarrhoeal disease' and selected as part of the list of avoidable conditions 'excluded from the analysis' as they accounted for less than 0.1 per cent of deaths in Australia and New Zealand.[15] Tetanus, diphtheria, whooping cough and polio were similarly included in the list of avoidable conditions excluded from the analysis and were grouped as 'childhood vaccine-preventable diseases' by Page, Tobias and Glover. Nolte and McKee included all of these causes in their main list. In our view it is important that these causes of death are included even if there are normally no deaths from them. This ensures consistency over time, and that all avoidable causes are accounted for.

Sexually transmitted infections (STIs) were included in the Page, Tobias and Glover list of conditions excluded from the analyses, but HIV/AIDS was included as a preventable cause. All STIs, including HIV/AIDS, were excluded from the Nolte and McKee list of amenable causes. Given the improvements in treatment in recent years, it is no longer reasonable to accept that deaths from HIV/AIDS cannot be avoided or significantly postponed through medical treatment. Like IHD, deaths from HIV/AIDS can now be both prevented and treated.

There is broad agreement between the two definitions on which cancers are amenable to medical intervention. Testicular cancer, however, is included in the Nolte and McKee definition, but not in the main Page, Tobias and Glover list, who instead list it as one of their avoidable conditions 'excluded from the analysis'. Neither bladder nor thyroid cancers were included in the Nolte and McKee definition, but both were considered amenable to medical care by Page, Tobias and Glover. Leukaemia is also dealt with differently in the two definitions. Nolte and McKee include all leukaemias (ICD-10 codes C91–C95), whereas Page, Tobias and Glover restrict their selection to those they consider most amenable to treatment (C91.0, C91.1). A final decision on which cancers should be included in a National Statistics definition requires further consideration.

Malignant melanoma of skin is placed in conditions amenable to medical care by Page, Tobias and Glover. Given that melanomas may be prevented through sun safe behaviour, this cause of death might be more suitably located in the preventable list of causes. As with IHD and HIV, melanoma is both treatable and preventable. In Australia and New Zealand (where the Page, Tobias and Glover list was developed) melanoma is the subject of extensive and intensive health promotion programmes to reduce sun exposure and encourage early diagnosis and treatment. Patients now presenting for treatment may have had much of the exposure which caused their tumours before effective health education campaigns. These current patients need medical treatment, but there is huge potential to prevent most future cases.

There is general agreement between both definitions on those causes of death from circulatory diseases that should be considered avoidable. The only notable difference between the two lists was the selection of chronic rheumatic heart disease (ICD-10 codes I05–I09) by Nolte and McKee, compared with all rheumatic and other valvular heart diseases (ICD-10 codes I01–I09) by Page, Tobias and Glover. Resolving this difference and establishing whether other circulatory causes not included in either list should be part of a definition requires further consideration.

There are a number of important differences between the definitions regarding respiratory diseases. Nolte and McKee considered all respiratory diseases to be amenable to medical intervention, and split the ICD chapter into three different groups; influenza, pneumonia and all respiratory diseases excluding influenza and pneumonia. Page, Tobias and Glover, however, only considered asthma to be amenable to medical intervention and influenza and pneumonia were considered to be preventable causes of death, along with COPD. Further discussion is needed over whether influenza and pneumonia should be considered amenable to medical care. It is also worth considering whether lung diseases due to external agents should be added to the Page, Tobias and Glover list in the category of preventable causes.

Different causes of death from diseases of the digestive system are considered avoidable in each list. Both consider diseases of the appendix and hernia as amenable to medical care, though there are slight differences in the ulcers selected as avoidable in each definition. Nolte and McKee select gastric, duodenal and peptic ulcers, to which Page, Tobias and Glover add gastrojejunal ulcer. Page, Tobias and Glover also include a number of causes of death from the diseases of the gallbladder, billiary tract and pancreas group that are not part of the Nolte and McKee list. This suggests a need for expert discussion on digestive diseases in order to build a consensus about which causes of death are avoidable.

Deaths related to pregnancy, childbirth and the puerperium are part of the Nolte and McKee definition, but only included in the list of avoidable conditions excluded from analysis by Page, Tobias and Glover (ectopic pregnancy is included with sexually transmitted diseases). Despite the fact that there are only a few deaths from these causes, we feel that a comprehensive indicator of causes of avoidable mortality should not completely exclude them from analysis. Both definitions include the whole ICD chapter of 'Certain conditions originating in the perinatal period' as amenable to medical care. It is unlikely that all conditions in this chapter are entirely avoidable, and further analysis of individual causes is necessary. Congenital malformations, deformations and chromosomal abnormalities are included in their entirety by Page, Tobias and Glover, but only congenital malformations of the circulatory system are included by Nolte and McKee. As with perinatal conditions, further expert analysis is needed to establish which of these causes of death should be considered avoidable. As referred to in the methods section of the article, the handling of neonatal deaths is problematic because of the form of death certificate used for these deaths in England and Wales. This is not straightforward to resolve.

Deaths from surgical misadventure are included in the Nolte and McKee definition but are not included by Page, Tobias and Glover. The majority of ICD codes used to identify deaths from both MRSA and *Clostridium difficile* are included amongst other categories, so these healthcare associated infections do not need to be added to the lists.[38,39]

Some anomalies were apparent when we examined the leading causes of death that remained after all of those classified as avoidable by Nolte and McKee, or Page, Tobias and Glover were removed. Two of the most common causes were heart failure and mesothelioma. Heart failure as an underlying cause of death is problematic. In many cases, it may simply reflect poor quality certification of cause of death by doctors who have failed to state what disease caused the heart to fail. However, a very large proportion of such deaths in England and Wales are likely to be due to IHD or hypertension, both of which are considered amenable to medical intervention. Heart failure itself is also treatable though not curable, as reflected in the inclusion of standards for its treatment in the National Service Framework for Coronary (ischaemic) heart disease.[40]

The importance of mesothelioma as a cause of death may not have been apparent when Nolte and McKee, or Page, Tobias and Glover were developing their lists of avoidable causes. Its incidence and mortality has risen steeply over the past two decades, and it has been easier to measure

its mortality since the introduction of ICD-10 (with a specific code for mesothelioma whatever its site) for cause of death coding in 2001. It is refractory to existing treatments, and remains one of the more rapidly fatal cancers. However, it is almost entirely due to exposure to asbestos. Removal of this exposure should prevent cases occurring in future, so both disease and mortality are preventable. Effective prevention will take some time to feed through into falling death rates, because of the very long time-lag between exposure and development of the disease. In the future, heart failure should probably be added to any list of treatable causes and mesothelioma to lists of preventable causes.

Links between premature and avoidable mortality

A previous ONS article on premature mortality discussed the selection of an age threshold before which deaths are considered to be premature. It argued that the most appropriate age beneath which deaths should be considered premature was 75 years.[20] Government targets for reducing deaths from cancer and circulatory diseases are focussed on the under 75s.[1] In addition, both of the definitions of avoidable mortality examined in this article only consider deaths before age 75 as potentially avoidable.[14,15] A threshold of age 75 also corresponds approximately to male life expectancy at birth.[41]

Concepts of premature and avoidable mortality are closely linked. We recognise that the selection of an age limit of 75 years is essentially arbitrary, but it is obvious that death cannot be avoided indefinitely, and a threshold is therefore necessary for meaningful analyses of both premature and avoidable mortality. Concepts of 'avoidable' mortality all essentially consider those causes which can be prevented or treated so as to postpone death. Selection of age 75 as our threshold does not, however, imply that some deaths in people aged 75 years and over cannot also be postponed through either preventative or medical interventions. For example, a reduction in transport accidents should reduce the numbers of people injured at all ages.

Choice of mortality indicator

Both of the statistical measures of mortality used in this article have strengths and weaknesses as a potential indicator of avoidable mortality. There is little variation in the leading causes of avoidable mortality when the different mortality indicators are used. It is for this reason that all figures in this article only present directly age-standardised rates.

Measures based on potential years of life lost (PYLL) have often been used to measure the impact of deaths at younger ages. Standardised years of life lost (SYLL) rates control the measure of PYLL for age, making it possible to compare SYLL rates over time. In 1977, Romeder and McWhinnie developed a model of PYLL with the primary aim of 'helping health planners define priorities, particularly with respect to prevention'.[42] Later, the United States Centers for Disease Control introduced a table based on PYLL to its standard outputs, noting that as an indicator PYLL was 'simple to compute and comprehend'.[43]

The Romeder and McWhinnie model of PYLL measures years of life lost to deaths between ages 1 and 70. The aim of the indicator was to 'give a broad view of the relative importance of major causes of premature mortality'. Analyses of avoidable mortality also aim to reveal the relative importance of major causes of death to target public health and other healthcare interventions. The PYLL method is therefore useful for ranking causes of death against each other, and can be applied to analyses of avoidable mortality in the same way.

PYLL methods have been criticised, however, for being open to manipulation. Gardner and Sanborn have demonstrated that for some purposes, such as determining the leading causes of early death, PYLL measures can be easily manipulated as different results are achieved depending on the PYLL method and the age ranges used for analysis.[44] This is a crucial issue in measuring avoidable mortality by cause, though the criticism can be somewhat negated by strict standardisation of the age thresholds and methodology used in analyses of PYLL indicators. With clearly defined age thresholds and an explicit methodology, SYLL rates can be as robust a measure of avoidable mortality as directly age-standardised mortality rates.

In contrast to years of life lost, directly age-standardised mortality rates offer a method of reporting on early deaths for which there is a widely used standard method of calculation. It is also the method used to measure government targets to reduce deaths from cancer and circulatory disease among the under 75s.[1] The Clinical and Health Outcomes Knowledge Base also uses directly age-standardised rates among the under 75s to measure avoidable mortality for selected causes of death.[17] Standardised years of life lost rates have not been commonly used in mortality analyses produced by the ONS, whereas age-standardised mortality rates are a key component of many ONS mortality outputs. On this basis, our preference is for the use of age-standardised mortality rates as an indicator of avoidable mortality as they are a more common form of currency in public health targets and mortality statistics in general.

Attributable fractions and split causes

A number of conditions do not sit perfectly in either the category of amenable or preventable causes of death. Recent research into IHD has shown that both preventative and medical interventions have been responsible for reductions in IHD mortality in recent years.[45–47] Nolte and McKee therefore split IHD on a 50:50 basis between their avoidable and non-avoidable categories (and also split cerebrovascular disease and diabetes on the same basis). Page, Tobias and Glover followed suit, attributing half of the deaths from each of these causes to both the amenable and preventable categories. Our decision not to split these causes between categories comes primarily from our concern that the fraction of deaths attributed to each category is likely to change over time.

It is important to recognise that for many causes, both medical interventions and the initial prevention of exposure to associated risk factors are important in reducing avoidable mortality. Page, Tobias and Glover define amenable causes as "those causes whose case fatality could be substantively reduced by currently available health care technologies".[15] This criteria was applied to cancers, for example, to select those where five-year relative survival rates were greater than 60 per cent. On this basis, it is not entirely clear for a number of conditions as to where they should be placed in any future list. Melanomas are defined as amenable by Page, Tobias and Jackson. Case fatality from melanoma can be substantially reduced by currently available healthcare treatments, but they may also be prevented through sun safe behaviour. Deaths from melanoma might therefore be more suitably located in the preventable category of causes, or divided between amenable and preventable causes.

Melanoma, like IHD, is an example of a cause that is both treatable and preventable. While we accept that it is far better to prevent a condition than to have to treat it, this example illustrates some of the complexities of categorical attribution (all or none classification) that is explicit in the development of an indicator of avoidable mortality. In reality, many causes will be avoidable through both medical intervention and primary prevention measures. Which category a cause of death is placed in; amenable, preventable or unavoidable; requires regular consideration.

Next steps

This article has raised a number of issues that require further consideration. In some cases expert opinion will be needed to inform decisions. We plan to review these issues in a discussion document which

will be made available for public consultation. This document will make proposals for the definition of indicators of both premature and avoidable mortality for use in National Statistics in England and Wales.

Acknowledgement

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Key findings

- Mortality from amenable causes has decreased substantially since 1993 for both males and females.
- Mortality from preventable causes has decreased by a larger amount among males than females since 1993.
- Mortality from unavoidable causes has decreased only modestly between 1993 and 2005.
- Despite considerable decreases between 1993 and 2005, ischaemic heart disease was the largest cause of amenable mortality in every year between 1993 and 2005 for both males and females.
- Smoking–related diseases and alcohol-related diseases were the major causes of preventable deaths in both males and females between 1993 and 2005.
- Deaths from alcohol-related diseases have increased considerably between 1993 and 2005, while smoking-related diseases have declined over the same period.
- The development of a National Statistics definition of avoidable mortality will be subject to public consultation.

References

1. Department of Health (1999) *Saving Lives: Our Healthier Nation*, TSO: London
2. Rutstein D D, Berenberg W, Chalmers T C, Child C G, Fishman A P and Perrin E B (1976) Measuring the quality of medical care: a clinical method. *N Eng J Med* **294**, 582–588.
3. Rutstein D D, Berenberg W, Chalmers T C, Child C G, Fishman A P and Perrin E B (1980) Measuring the quality of medical care: second revision of tables of indexes. *N Eng J Med* **302**, 1146.
4. Charlton J R H, Hartley R M, Silver R and Holland W W (1983) Geographical variation in mortality from conditions amenable to medical intervention in England and Wales. *Lancet* **i**, 691–696.
5. Charlton J R H, Bauer R and Lakhani A (1984) Outcome measures for district and regional health care planning. *Community Medicine* **6**, 306–315.
6. Charlton J R H and Velez R (1986) Some international comparisons of mortality amenable to medical intervention. *Br Med J* **292**, 295–301.
7. Bauer R L and Charlton J R H (1986) Area variation in mortality from diseases amenable to medical intervention: the contribution of differences in morbidity. *Int J Epidemiol* **3**, 408–412.
8. Mackenbach J P, Bouvier-Colle M H and Jougla E (1990) "Avoidable" mortality and health services: a review of aggregate data studies. *J Epidemiol Community Health* **44**, 106–111.
9. Niti M and Ng T P (2001) Temporal trends and ethnic variations in amenable mortality in Singapore 1965-1994: the impact of health care in transition. *Int J Epidemiol* **30**, 966–973.
10. Westerling R (2001) Commentary: Evaluating avoidable mortality in developing countries – an important issue for public health. *Int J Epidemiol* **30**, 973–975.
11. Treurniet H F, Looman C W , Maas PJ van der, Machenbach J P (1999) Variations in 'avoidable' mortality: a reflection of variations in incidence? *Int J Epidemiol* **28**, 225–232.
12. Holland W W (ed.) (1993) *European Community Atlas of 'Avoidable Death': Volume Two*, Commission of the European Communities Health Service Research Series No 9. Oxford.
13. Nolte E and McKee M (2003) Measuring the health of nations: analysis of mortality amenable to health care. *Br Med J* **327**, 1129.
14. Nolte E and McKee M (2004) *Does health care save lives? Avoidable mortality revisited*, Nuffield Trust, London.
15. Page A, Tobias M, Glover J, Wright C, Hetzel D and Fisher E (2006) *Australian and New Zealand Atlas of Avoidable Mortality*, University of Adelaide: Adelaide: PHIDU.
16. Tobias M and Jackson G (2001) Avoidable mortality in New Zealand, 1981–97. *Aust NZ J Public Health* **25**, 12–20.
17. Lakhani A, Olearnik H and Eayres D (eds.) (2006) Clinical and Health Outcomes Knowledge Base, The Information Centre for health and social care / National Centre for Health Outcomes Development: London.
18. Office for National Statistics (2005) *Measuring premature and avoidable mortality: ONS proposals for national indicators*. Available at: www.statistics.gov.uk/about/Consultations/mortality.asp
19. Office for National Statistics (2006) *Measuring premature and avoidable mortality: Response to consultation*. Available at: www.statistics.gov.uk/about/Consultations/mortality.asp
20. Wheller L, Baker A and Griffiths C (2006) Trends in Premature Mortality in England and Wales, 1950–2004. *Health Statistics Quarterly* **31**, 34–41.
21. Office for National Statistics (2002) Report: Results of the ICD-10 bridge coding study, England and Wales 1999. *Health Statistics Quarterly* **14**, 75–83.
22. Office for National Statistics. ICD-10 for Mortality. Available at: www.statistics.gov.uk/about/classifications/ICD10/default.asp. Accessed 25/01/07.
23. Rooney C and Devis T (1996) Mortality trends by cause of death in England and Wales 1980–1994: the impact of introducing automated cause coding and related changes in 1993. *Population Trends* **86**, 29–35.
24. Office for National Statistics. *Understanding the changes to mortality statistics following the move to coding cause of death to ICD-10*. Available at: www.statistics.gov.uk/about/classifications/ICD10/default.asp
25. Rooney C, Griffiths C and Cook L (2002) The implementation of ICD-10 for cause of death coding – some preliminary results from the bridge coding study. *Health Statistics Quarterly* **13**, 31–41.
26. Office for National Statistics (2002) Report: Results of the ICD-10 bridge coding study, England and Wales 1999. *Health Statistics Quarterly* **14**, 75–83.
27. Griffiths C and Rooney C (2003) The effect of the introduction of ICD-10 on trends in mortality from injury and poisoning in England and Wales. *Health Statistics Quarterly* **19**, 10–21.
28. Griffiths C, Brock A and Rooney C (2004) The impact of introducing ICD-10 on trends in mortality from circulatory diseases in England and Wales. *Health Statistics Quarterly* **22**, 14–20.
29. Brock A, Griffiths C and Rooney C (2004) The effect of the introduction of ICD-10 on cancer mortality trends in England and Wales. *Health Statistics Quarterly* **23**, 7–17.
30. Office for National Statistics. *Cancer survival: Rates improved during 1996-2001*. Available at: www.statistics.gov.uk/CCI/nugget.asp?ID=861&Pos=5&ColRank=1&Rank=144. Accessed 25/01/07.
31. Office for National Statistics (2006) *Defining alcohol-related deaths - summary of responses to ONS proposals*. Available at: www.statistics.gov.uk/downloads/theme_health/Summary_responses.pdf
32. Griffiths C, Wright O and Rooney C (2006) Trends in injury and poisoning mortality using the ICE on injury statistics matrix, England and Wales, 1979–2004. *Health Statistics Quarterly* **32**, 5–16.
33. Office for National Statistics (2005) *Mortality Statistics: Childhood, Infant and Perinatal*, Series DH3 No.36, Office for National Statistics: London.

34. Office for National Statistics. Population Estimates for England and Wales. Available at: www.statistics.gov.uk/statbase/explorer.asp?CTG=3&SL=&E=4819#4819.
35. Brock A and Griffiths C (2003) Trends in the mortality of young adults aged 15–44 in England and Wales, 1961–2001. *Health Statistics Quarterly* **19**, 22–31.
36. Brock A and Griffiths C (2003) Trends in suicide by method in England and Wales, 1979–2001. *Health Statistics Quarterly* **20**, 7–18.
37. Breakwell C, Baker A, Griffiths C, Jackson G, Fegan G and Marshall D (2007) Trends and geographical variations in alcohol-related deaths in the UK, 1991–2004. *Health Statistics Quarterly* **33**, 6–24.
38. Office for National Statistics (2006) Report: Deaths involving MRSA: England and Wales, 2000–2004. *Health Statistics Quarterly* **29**, 63–68.
39. Office for National Statistics (2006) Report: Deaths involving *Clostridium difficile*: England and Wales, 1999–2004. *Health Statistics Quarterly* **30**, 56–60.
40. National Health Service (2000) *National Service Framework for Coronary Heart Disease*. Department of Health, London.
41. Office for National Statistics (2006) *Life expectancy at birth: Results for England and Wales*. Available at: www.statistics.gov.uk/downloads/theme_population/LE_E&W_2006.xls
42. Romeder J M and McWhinnie J R (1977) Potential years of life lost between ages 1 and 70: an indicator of premature mortality for health planning. *Int J Epidemiol* **6**, 143–151.
43. Centers for Disease Control (1986) Premature Mortality in the United States: years of life lost and health priorities. *MMWR* **35**, 1S–11S.
44. Gardner J W and Sanborn J S (1990) Years of potential life lost (YPLL) – what does it measure? *Epidemiology* **1**, 322–329.
45. Capewell S, Morrisson C E and McMurrey J J (1999) Contribution of modern cardiovascular treatment and risk factor changes to the decline in coronary heart disease mortality in Scotland between 1975 and 1994. *Heart* **81**, 380–386.
46. Capewell S, Beaglehole R, Seddon M and McMurrey J J (2000) Explanation for the decline in coronary heart disease mortality rates in Auckland, New Zealand, between 1982 and 1993. *Circulation* **102**, 1511–1516.
47. Tunstall-Pedoe H, Vanuzzo D, Hobbs M, Mahonen M, Cepatis Z, Kuulasmaa K and Keil U (2000) Estimation of contribution of changes in coronary care to improving survival, event rates, and coronary heart disease mortality across the WHO MONICA Project populations. *Lancet* **355**, 688–700.

Appendix 1 Avoidable Mortality: Cause lists

Cause of death	ICD–9	ICD–10	Comparability Ratios (where applicable)		Total deaths 1993–2005	
			Males – under 75	Females – under 75	Males – under 75	Females – under 75
Nolte and Mckee Definition						
Intestinal infectious diseases	001–009	A00–A09	1.217	1.340	765	823
Tuberculosis	010–018, 137	A15–A19, B90			1,900	1,175
Other infections (diphtheria, other tetanus, acute poliomyelitis)	032, 037, 045	A36, A35, A80			2	2
Whooping cough	033	A37			21	14
Septicaemia (streptococcal septicaemia, other septicaemia)	038	A40–A41	1.098	1.130	3,858	3,411
Measles	055	B05			10	7
Malignant neoplasm of colon and rectum	153–154	C18–C21	1.014	1.015	55,294	37,124
Other malignant neoplasm of skin	173	C44		1.140	1,112	493
Malignant neoplasm of breast	174–175	C50	1.108		502	89,602
Malignant neoplasm of cervix uteri	180	C53			0	10,251
Malignant neoplasm of corpus uteri and uterus unspecified	179,182	C54, C55		1.021	0	8,601
Malignant neoplasm of testis	186	C62			879	0
Hodgkin's disease	201	C81		1.079	1,612	1,066
Leukaemia	204–208	C91–C95	1.061	1.049	15,098	10,216
Disorders of thyroid gland	240–246	E00–E07	1.675	1.596	165	537
Diabetes mellitus	250	E10–E14	1.044	1.042	16,852	12,442
Epilepsy and status epilepticus	345	G40–G41	1.049	1.090	5,927	3,592
Chronic rheumatic heart diseases	393–398	I05–I09	0.868	0.917	2,649	5,089
Hypertensive diseases	401–405	I10–I15		1.014	8,609	5,600
Ischaemic heart diseases	410–414	I20–I25	1.005	1.007	396,402	159,491
Cerebrovascular diseases	430–438	I60–I69	1.073	1.046	87,660	75,028
All respiratory diseases (excluding pneumonia and influenza)	460–479, 488–519	J00–J09, J20–J99	1.013		92,472	67,977
Influenza	487	J10–J11			284	259
Pneumonia	480–486	J12–J18	0.547	0.545	49,923	36,872
Gastric and duodenal ulcer	531–533	K25–K27			9,832	6,326
Diseases of appendix	540–543	K35–K38			472	341
Hernia	550–553	K40–K46	1.037	1.057	1,169	1,160
Cholelithiasis and cholecystitis	574–575.1	K80–K81	1.883	1.899	1,142	1,204
Nephritis and nephrosis	580–589	N00–N07, N17–N19, N25–N27	0.542	0.537	5,754	4,173
Hyperplasia of prostate	600	N40	0.926		471	0
Pregnancy, childbirth and the puerperium	630–676	O00–O99			0	545
Congenital malformations of the circulatory system	745–747	Q20–Q28			3,816	3,243
Perinatal deaths, all causes, excluding stillbirths	760–779	P00–P96, A33			1,258	857
Misadventures to patients during surgical and medical care	E870–E876, E878–E879	Y60–Y69, Y83–Y84			1,049	1,016
Neonatal deaths					17,922	13,673

Cause of death	ICD–9	ICD–10	Comparability Ratios (where applicable)		Total deaths 1993–2005	
			Males – under 75	Females – under 75	Males – under 75	Females – under 75
Page, Tobias and Glover Definition: Avoidable: Amenable to medical care						
Condition group and cause						
Tuberculosis	010–018,137	A15–A19, B90			1,900	1,175
Selected invasive bacterial and protozoal infection	034–036, 038, 084, 320, 681, 682	A38–A41, A46, A48,1 B50–B54, G00, G03, J02.0, L03	1.049	1.045	6,577	5,837
Malignant neoplasm of colon and rectum	153, 154	C18–C21	1.014	1.015	55,294	37,124
Malignant melanoma of skin	172	C43	0.966	0.955	7,129	5,819
Other malignant neoplasms of skin	173	C44		1.140	1,112	493
Malignant neoplasms of breast	174–175	C50	1.108		502	89,602
Malignant neoplasm of corpus uteri and uterus unspecified	179, 182	C54, C55		1.021	0	8,601
Malignant neoplasm of cervix uteri	180	C53			0	10,251
Malignant neoplasm of bladder	188	C67		1.016	16,314	6,104
Malignant neoplasm of thyroid gland	193	C73			773	1,053
Hodgkin's disease	201	C81		1.079	1,612	1,066
Lymphoid leukaemia – acute/ chronic	204.0, 204.1	C91.0, C91.1	1.068	1.068	4,846	2,463
Benign neoplasms	210–229	D10–D36			1,128	1,479
Disorders of thyroid gland	240–246	E00–E07	1.675	1.596	165	537
Diabetes mellitus	250	E10–E14	1.044	1.042	16,852	12,442
Epilepsy and status epilepticus	345	G40, G41	1.049	1.090	5,927	3,592
Rheumatic and other valvular heart disease	390–398	I01–I09	0.865	0.914	2,928	5,677
Hypertensive diseases	401–405	I10–I15		1.014	8,609	5,600
Ischaemic heart diseases	410–414	I20–I25	1.005	1.007	396,402	159,491
Cerebrovascular diseases	430–438	I60–I69	1.073	1.046	87,660	75,028
Nephritis and nephrosis	580–589	N00–N07, N17–N19, N25–N27	0.542	0.537	5,754	4,173
Obstructive uropathy & prostatic hyperplasia	592, 593.7, 594, 598, 599.6, 600	N13, N20, N21, N35, N40, N99.1	1.233	1.369	1,027	542
Asthma	493	J45, J46		1.056	4,258	5,295
Peptic ulcer	531–534	K25–K28			9,876	6,344
Acute abdomen, appendicitis, intestinal obstruction, cholecystitis / lithiasis, pancreatitis, hernia	540–543, 550–553, 574–577	K35–K38, K40–K46, K80–K83, K85, K86.1–K86.9, K91.5	0.820	0.854	7,709	5,833
Congenital malformations, deformations and chromosomal anomalies	740–759	Q00–Q99			7,315	6,663
Complications of perinatal period	760–779	P00–P96			1,258	857
Neonatal deaths					17,922	13,673

Appendix 1- *continued*

Avoidable Mortality: Cause lists

Condition group and cause	ICD–9	ICD–10	Comparability Ratios (where applicable)		Total deaths 1993–2005	
			Males – under 75	Females – under 75	Males – under 75	Females – under 75
Page, Tobias and Glover Definition: Avoidable: Preventable						
HIV/AIDS	042–044	B20–B24			3,203	685
Viral hepatitis	070	B15–B19			1,231	532
Malignant neoplasm of lip, oral cavity and pharynx	140–149	C00–C14		0.960	10,230	4,171
Malignant neoplasm of oesophagus	150	C15	1.010		30,374	11,348
Malignant neoplasm of stomach	151	C16	1.019		26,181	11,273
Malignant neoplasm of liver	155	C22		0.977	9,633	5,212
Malignant neoplasm of trachea, bronchus and lung	162	C33, C34	0.996	0.996	143,472	81,588
Alcohol-related diseases, excluding external causes	291, 303, 305.0, 425.5, 571.0–5, 571.8, 571.9	F10, G31.2, G62.1, I42.6, K29.2, K70, K73, K74 (excl. K74.3–K74.5), K86.0			38,239	19,878
Illicit drug use disorders	292, 304, 305.2–305.9	F11–F16, F18, F19			7,142	1,282
Aortic aneurysm and dissection	441	I71			30,825	10,783
DVT with pulmonary embolism	415.1, 451.1–451.2, 451.9, 453.9	I26, I80.1–I80.3, I80.9, I82.9	0.626	0.621	16,216	17,736
Influenza	487	J10–J11			284	259
Pneumonia	480–486	J12–J18	0.547	0.545	49,923	36,872
COPD	490–492, 496	J40–J44	1.035	1.035	66,375	48,558
Land transport accidents	E800–E829	V01–V89			27,808	8,614
Accidental poisonings	E850–E869	X40–X49			8,900	3,395
Falls	E880–E886, E888	W00–W19			8,367	3,995
Exposure to fire, smoke and flames	E890–E899	X00–X09			2,121	1,169
Accidental drowning and submersion	E910	W65–W74			1,929	493
Fracture, cause unspecified	E887	X59 with secondary cause S72			666	786
Suicide and self inflicted injuries	E950–E959, E980–E989 (excl. E988.8)	X60–X84, Y10–Y34 (excl. Y33.9)			45,056	14,264
Homicide/ assault	E960–E969, E988.8	X85–Y09, Y33.9			6,741	2,864

Appendix 2

Avoidable Mortality: Age-standardised mortality rates per 100,000 population: Cause of death by year

Nolte and Mckee Definition

Cause of death	Sex	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Intestinal infectious diseases	Male	0.16	0.19	0.23	0.20	0.31	0.35	0.31	0.25	0.15	0.17	0.21	0.27	0.43
	Female	0.18	0.19	0.24	0.23	0.25	0.28	0.38	0.31	0.15	0.18	0.27	0.29	0.47
Tuberculosis	Male	0.60	0.67	0.63	0.60	0.57	0.59	0.54	0.45	0.46	0.51	0.52	0.46	0.41
	Female	0.39	0.38	0.38	0.33	0.30	0.24	0.24	0.29	0.34	0.27	0.28	0.26	0.25
Other infections (diphtheria, other	Male	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
tetanus, acute poliomyelitis)	Female	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Whooping cough	Male	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.02	0.02	0.00	0.00	0.01
	Female	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
Septicaemia (streptococcal	Male	0.97	0.97	1.20	1.17	1.04	1.06	1.31	1.23	1.26	1.16	1.26	1.32	1.31
septicaemia, other septicaemia)	Female	0.72	0.73	0.90	0.86	1.04	1.03	0.98	1.08	1.04	1.08	1.05	1.13	1.06
Measles	Male	0.01	0.0	0.0	0.0	0.01	0.01	0.01	0.0	0.0	0.0	0.0	0.0	0.0
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.0	0.0	0.0
Malignant neoplasm of colon and rectum	Male	18.45	17.63	17.91	17.25	16.65	16.26	15.32	15.04	14.63	14.28	13.99	13.68	13.21
	Female	11.97	11.51	10.98	10.54	10.30	9.60	9.72	8.97	8.47	8.33	8.19	8.16	8.18
Other malignant neoplasm of skin	Male	0.41	0.47	0.41	0.31	0.22	0.30	0.29	0.28	0.27	0.25	0.28	0.32	0.23
	Female	0.13	0.21	0.19	0.14	0.15	0.17	0.11	0.15	0.10	0.12	0.12	0.10	0.11
Malignant neoplasm of breast	Male	0.21	0.19	0.20	0.16	0.14	0.19	0.11	0.14	0.14	0.15	0.11	0.10	0.14
	Female	29.35	29.00	28.12	26.64	25.95	25.30	24.23	23.77	23.03	22.48	21.69	21.17	20.81
Malignant neoplasm of cervix uteri	Male	-	-	-	-	-	-	-	-	-	-	-	-	-
	Female	4.06	3.51	3.49	3.46	3.08	2.92	2.67	2.75	2.53	2.31	2.21	2.19	2.09
Malignant neoplasm of corpus	Male	-	-	-	-	-	-	-	-	-	-	-	-	-
uteri and uterus unspecified	Female	2.37	2.13	2.31	2.21	2.30	2.20	2.05	2.25	2.33	2.12	2.26	2.28	2.46
Malignant neoplasm of testis	Male	0.33	0.28	0.28	0.40	0.23	0.27	0.25	0.25	0.19	0.21	0.24	0.24	0.21
	Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Hodgkin's disease	Male	0.72	0.53	0.54	0.55	0.50	0.43	0.41	0.43	0.39	0.39	0.46	0.40	0.37
	Female	0.47	0.35	0.38	0.36	0.29	0.30	0.28	0.32	0.23	0.29	0.25	0.26	0.27
Leukaemia	Male	4.94	4.80	4.92	4.42	4.63	4.64	4.60	4.53	4.25	4.15	4.38	3.97	3.98
	Female	3.10	3.01	2.96	2.91	3.08	2.87	3.28	2.72	2.76	2.83	2.45	2.56	2.41
Disorders of thyroid gland	Male	0.09	0.06	0.12	0.06	0.10	0.06	0.12	0.05	0.03	0.04	0.06	0.04	0.04
	Female	0.32	0.24	0.27	0.20	0.23	0.18	0.26	0.18	0.10	0.12	0.09	0.10	0.12
Diabetes mellitus	Male	5.43	5.40	5.43	5.37	5.19	4.95	5.17	4.70	4.86	4.46	4.50	4.00	3.70
	Female	3.82	3.60	3.94	3.55	3.52	3.25	3.26	3.10	2.77	2.96	2.95	2.62	2.30
Epilepsy and status epilepticus	Male	1.66	1.66	1.62	1.95	1.83	1.89	1.83	1.95	1.90	1.82	1.90	1.77	1.91
	Female	1.09	1.09	1.15	1.04	1.09	1.13	1.18	1.01	1.25	1.03	1.16	1.10	1.14
Chronic rheumatic heart diseases	Male	0.87	0.83	0.81	0.82	0.67	0.63	0.74	0.62	0.59	0.59	0.52	0.53	0.54
	Female	1.58	1.61	1.54	1.40	1.20	1.14	1.23	1.19	1.15	0.89	0.90	0.84	0.78
Hypertensive diseases	Male	2.84	2.35	2.36	2.41	2.45	2.59	2.65	2.56	2.28	2.27	2.23	2.22	2.31
	Female	1.54	1.42	1.38	1.50	1.54	1.42	1.35	1.30	1.42	1.39	1.35	1.19	1.30
Ischaemic heart diseases	Male	159.30	144.47	139.19	132.85	123.51	117.86	110.30	102.68	96.66	90.54	85.24	78.01	72.70
	Female	56.27	51.08	48.65	46.54	43.50	41.58	37.95	34.81	32.95	30.73	28.24	25.15	23.17
Cerebrovascular diseases	Male	31.32	29.85	29.66	29.49	28.27	27.34	25.84	23.71	22.91	22.53	21.08	19.29	17.65
	Female	23.42	22.30	22.17	21.91	20.89	20.46	19.62	17.63	17.04	16.46	15.98	14.30	13.44
All respiratory diseases	Male	30.50	26.98	28.47	26.71	27.10	25.71	26.48	25.04	23.20	22.40	23.48	21.97	22.19
(excluding pneumonia and influenza)	Female	17.79	15.79	17.53	16.90	17.38	16.69	17.68	16.46	15.86	16.15	17.06	15.21	15.38
Influenza	Male	0.16	0.04	0.09	0.05	0.07	0.07	0.21	0.20	0.03	0.03	0.04	0.02	0.05
	Female	0.13	0.03	0.08	0.06	0.10	0.04	0.16	0.12	0.03	0.03	0.05	0.02	0.07
Pneumonia	Male	9.12	8.36	9.40	9.55	9.71	8.97	9.84	1-	8.46	8.48	8.89	8.00	8.16
	Female	5.89	5.25	6.04	5.90	6.31	5.98	6.47	6.41	5.61	5.60	6.03	5.35	5.34
Gastric and duodenal ulcer	Male	3.04	3.10	2.77	2.91	3.02	2.67	3.01	2.69	2.53	2.63	2.50	2.49	2.31
	Female	1.71	1.76	1.70	1.71	1.68	1.59	1.53	1.63	1.54	1.44	1.29	1.39	1.23
Diseases of appendix	Male	0.15	0.12	0.08	0.12	0.14	0.17	0.15	0.14	0.11	0.17	0.12	0.16	0.11
	Female	0.10	0.08	0.10	0.06	0.08	0.09	0.12	0.08	0.12	0.11	0.08	0.08	0.08
Hernia	Male	0.37	0.29	0.39	0.36	0.33	0.32	0.37	0.31	0.25	0.32	0.27	0.33	0.37
	Female	0.28	0.27	0.31	0.30	0.31	0.26	0.23	0.35	0.28	0.25	0.39	0.31	0.31
Cholelithiasis and cholecystitis	Male	0.60	0.48	0.59	0.65	0.55	0.59	0.60	0.58	0.32	0.28	0.33	0.33	0.34
	Female	0.58	0.54	0.49	0.64	0.69	0.62	0.58	0.58	0.28	0.32	0.23	0.27	0.32
Nephritis and nephrosis	Male	1.10	1.01	1.05	0.92	0.87	0.78	0.86	0.76	1.45	1.58	1.42	1.40	1.22
	Female	0.73	0.60	0.65	0.57	0.52	0.59	0.45	0.55	1.03	0.99	0.92	0.94	0.97
Hyperplasia of prostate	Male	0.20	0.18	0.18	0.13	0.17	0.13	0.10	0.08	0.09	0.09	0.07	0.06	0.05
	Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Pregnancy, childbirth and the puerperium	Male	-	-	-	-	-	-	-	-	-	-	-	-	-
	Female	0.12	0.19	0.17	0.18	0.15	0.16	0.11	0.14	0.17	0.14	0.16	0.18	0.17
Congenital malformations of	Male	1.39	1.44	1.33	1.34	1.42	1.31	1.19	1.19	1.22	1.15	1.06	1.03	1.06
the circulatory system	Female	1.37	1.24	1.17	1.01	1.16	1.03	1.08	1.05	1.00	0.89	0.89	0.88	0.87
Perinatal deaths, all causes, excluding stillbirths	Male	0.57	0.38	0.40	0.42	0.39	0.41	0.31	0.26	0.55	0.71	0.60	0.64	0.56
	Female	0.36	0.31	0.33	0.32	0.25	0.20	0.27	0.19	0.43	0.40	0.46	0.48	0.42
Misadventures to patients during	Male	0.30	0.23	0.29	0.33	0.30	0.30	0.34	0.29	0.29	0.36	0.27	0.30	0.29
surgical and medical care	Female	0.26	0.22	0.20	0.34	0.28	0.24	0.32	0.30	0.32	0.24	0.22	0.25	0.31

Appendix 2- *continued*

Avoidable Mortality: Age-standardised mortality rates per 100,000 population: Cause of death by year

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Cause of death	Sex	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Amenable to medical care														
Tuberculosis	Male	0.60	0.67	0.63	0.60	0.57	0.59	0.54	0.45	0.46	0.51	0.52	0.46	0.41
	Female	0.39	0.38	0.38	0.33	0.30	0.24	0.24	0.29	0.34	0.27	0.28	0.26	0.25
Selected invasive bacterial and protozoal infection	Male	1.71	1.57	1.92	2.11	1.88	1.93	2.16	2.14	2.23	2.06	2.23	2.09	2.26
	Female	1.31	1.26	1.56	1.71	1.85	1.77	1.71	1.86	1.83	1.73	1.78	1.81	1.73
Malignant neoplasm of colon and rectum	Male	18.45	17.63	17.91	17.25	16.65	16.26	15.32	15.04	14.63	14.28	13.99	13.68	13.21
	Female	11.97	11.51	10.98	10.54	10.30	9.60	9.72	8.97	8.47	8.33	8.19	8.16	8.18
Malignant melanoma of skin	Male	1.99	1.91	2.03	1.93	1.88	1.91	2.05	2.27	1.96	2.07	2.24	2.21	2.10
	Female	1.69	1.68	1.52	1.53	1.53	1.60	1.44	1.64	1.54	1.46	1.52	1.52	1.57
Other malignant neoplasms of skin	Male	0.41	0.47	0.41	0.31	0.22	0.30	0.29	0.28	0.27	0.25	0.28	0.32	0.23
	Female	0.13	0.21	0.19	0.14	0.15	0.17	0.11	0.15	0.10	0.12	0.12	0.10	0.11
Malignant neoplasms of breast	Male	0.21	0.19	0.20	0.16	0.14	0.19	0.11	0.14	0.14	0.15	0.11	0.10	0.14
	Female	29.35	29.00	28.12	26.64	25.95	25.30	24.23	23.77	23.03	22.48	21.69	21.17	20.81
Malignant neoplasm of corpus uteri and uterus unspecified	Male	-	-	-	-	-	-	-	-	-	-	-	-	-
	Female	2.37	2.13	2.31	2.21	2.30	2.20	2.05	2.25	2.33	2.12	2.26	2.28	2.46
Malignant neoplasm of cervix uteri	Male	-	-	-	-	-	-	-	-	-	-	-	-	-
	Female	4.06	3.51	3.49	3.46	3.08	2.92	2.67	2.75	2.53	2.31	2.21	2.19	2.09
Malignant neoplasm of bladder	Male	5.47	5.36	5.32	5.10	4.75	4.64	4.33	4.49	4.07	3.92	3.81	3.53	3.48
	Female	1.84	1.77	1.65	1.58	1.51	1.62	1.54	1.49	1.32	1.39	1.44	1.26	1.25
Malignant neoplasm of thyroid gland	Male	0.25	0.23	0.28	0.22	0.21	0.25	0.23	0.19	0.16	0.22	0.22	0.19	0.21
	Female	0.32	0.27	0.23	0.30	0.23	0.27	0.31	0.24	0.23	0.26	0.24	0.29	0.31
Hodgkin's disease	Male	0.72	0.53	0.54	0.55	0.50	0.43	0.41	0.43	0.39	0.39	0.46	0.40	0.37
	Female	0.47	0.35	0.38	0.36	0.29	0.30	0.28	0.32	0.23	0.29	0.25	0.26	0.27
Lymphoid leukaemia – acute/chronic	Male	1.62	1.67	1.62	1.41	1.60	1.63	1.55	1.39	1.32	1.38	1.32	1.15	1.29
	Female	0.80	0.71	0.71	0.78	0.78	0.62	0.86	0.67	0.68	0.72	0.55	0.67	0.56
Benign neoplasms	Male	0.32	0.28	0.38	0.43	0.38	0.36	0.33	0.35	0.24	0.31	0.32	0.30	0.24
	Female	0.45	0.45	0.45	0.52	0.41	0.37	0.44	0.35	0.38	0.30	0.32	0.32	0.36
Disorders of thyroid gland	Male	0.09	0.06	0.12	0.06	0.10	0.06	0.12	0.05	0.03	0.04	0.06	0.04	0.04
	Female	0.32	0.24	0.27	0.20	0.23	0.18	0.26	0.18	0.10	0.12	0.09	0.10	0.12
Diabetes mellitus	Male	5.43	5.40	5.43	5.37	5.19	4.95	5.17	4.70	4.86	4.46	4.50	4.00	3.70
	Female	3.82	3.60	3.94	3.55	3.52	3.25	3.26	3.10	2.77	2.96	2.95	2.62	2.30
Epilepsy and status epilepticus	Male	1.66	1.66	1.62	1.95	1.83	1.89	1.83	1.95	1.90	1.82	1.90	1.77	1.91
	Female	1.09	1.09	1.15	1.04	1.09	1.13	1.18	1.01	1.25	1.03	1.16	1.10	1.14
Rheumatic and other valvular heart disease	Male	1.07	1.00	0.96	0.94	0.78	0.72	0.75	0.64	0.59	0.59	0.52	0.53	0.54
	Female	1.91	1.98	1.84	1.69	1.38	1.31	1.23	1.21	1.15	0.89	0.91	0.84	0.78
Hypertensive diseases	Male	2.84	2.35	2.36	2.41	2.45	2.59	2.65	2.56	2.28	2.27	2.23	2.22	2.31
	Female	1.54	1.42	1.38	1.50	1.54	1.42	1.35	1.30	1.42	1.39	1.35	1.19	1.30
Ischaemic heart diseases	Male	159.30	144.47	139.19	132.85	123.51	117.86	110.30	102.68	96.66	90.54	85.24	78.01	72.70
	Female	56.27	51.08	48.65	46.54	43.50	41.58	37.95	34.81	32.95	30.73	28.24	25.15	23.17
Cerebrovascular diseases	Male	31.32	29.85	29.66	29.49	28.27	27.34	25.84	23.71	22.91	22.53	21.08	19.29	17.65
	Female	23.42	22.30	22.17	21.91	20.89	20.46	19.62	17.63	17.04	16.46	15.98	14.30	13.44
Nephritis and nephrosis	Male	1.10	1.01	1.05	0.92	0.87	0.78	0.86	0.76	1.45	1.58	1.42	1.40	1.22
	Female	0.73	0.60	0.65	0.57	0.52	0.59	0.45	0.55	1.03	0.99	0.92	0.94	0.97
Obstructive uropathy & prostatic hyperplasia	Male	0.50	0.45	0.41	0.32	0.42	0.33	0.29	0.24	0.25	0.25	0.24	0.21	0.21
	Female	0.15	0.17	0.20	0.15	0.10	0.15	0.15	0.15	0.18	0.17	0.17	0.14	0.20
Asthma	Male	1.72	1.76	1.34	1.44	1.40	1.27	1.27	1.20	1.10	1.12	0.95	0.98	0.77
	Female	2.04	1.78	1.79	1.54	1.69	1.60	1.59	1.53	1.29	1.31	1.17	1.05	0.93
Peptic ulcer	Male	3.06	3.11	2.79	2.93	3.03	2.68	3.03	2.70	2.56	2.64	2.51	2.51	2.32
	Female	1.71	1.77	1.71	1.71	1.69	1.59	1.53	1.63	1.55	1.44	1.29	1.40	1.24
Acute abdomen, appendicitis, intestinal obstruction, cholecystitis / lithiasis, pancreatitis, hernia	Male	1.70	1.66	1.78	1.77	1.81	1.90	1.87	1.85	2.22	2.20	2.18	2.25	2.01
	Female	1.29	1.27	1.18	1.26	1.29	1.32	1.23	1.26	1.48	1.51	1.51	1.53	1.52
Congenital malformations, deformations and chromosomal anomalies	Male	2.44	2.41	2.35	2.52	2.47	2.34	2.15	2.12	2.43	2.43	2.38	2.30	2.49
	Female	2.41	2.20	2.24	1.97	2.19	2.13	2.13	2.04	2.33	2.12	2.24	2.10	2.02
Complications of perinatal period	Male	0.57	0.38	0.40	0.42	0.39	0.41	0.31	0.26	0.55	0.71	0.60	0.64	0.56
	Female	0.36	0.31	0.33	0.32	0.25	0.20	0.27	0.19	0.43	0.40	0.46	0.48	0.42

Appendix 2- *continued*

Avoidable Mortality: Age-standardised mortality rates per 100,000 population: Cause of death by year

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Cause of death	Sex	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Preventable														
HIV/AIDS	Male	2.18	2.42	2.21	1.97	0.93	0.59	0.58	0.65	0.49	0.58	0.57	0.50	0.58
	Female	0.18	0.22	0.23	0.25	0.21	0.13	0.09	0.13	0.18	0.16	0.27	0.29	0.23
Viral hepatitis	Male	0.18	0.16	0.20	0.35	0.44	0.41	0.37	0.49	0.48	0.39	0.48	0.42	0.44
	Female	0.10	0.04	0.11	0.17	0.12	0.16	0.16	0.18	0.16	0.17	0.15	0.21	0.19
Malignant neoplasm of lip,	Male	2.96	3.33	2.84	3.10	3.08	3.14	3.08	2.79	3.02	2.98	2.68	3.13	3.04
oral cavity and pharynx	Female	1.08	1.14	1.02	1.01	1.10	1.13	1.07	1.09	1.16	1.12	1.13	1.06	1.05
Malignant neoplasm of oesophagus	Male	8.57	8.90	8.73	8.71	8.60	8.74	8.65	8.59	8.57	8.75	9.06	8.56	8.66
	Female	3.00	2.89	3.11	2.99	2.98	2.75	2.98	2.90	2.73	2.90	2.78	2.69	2.65
Malignant neoplasm of stomach	Male	9.67	9.96	8.77	9.02	7.97	7.95	7.56	6.83	6.32	6.14	5.67	5.18	5.23
	Female	3.63	3.64	3.41	2.98	3.28	2.92	2.78	2.62	2.58	2.32	2.23	2.29	2.11
Malignant neoplasm of liver	Male	2.58	2.53	2.55	2.56	2.82	2.63	2.56	2.84	2.62	2.71	3.01	2.99	3.10
	Female	1.26	1.18	1.30	1.29	1.39	1.26	1.29	1.37	1.29	1.37	1.29	1.48	1.47
Malignant neoplasm of trachea,	Male	50.37	48.74	46.60	44.94	41.94	41.69	39.04	37.41	36.06	35.79	33.51	32.59	31.88
bronchus and lung	Female	22.11	22.26	21.64	21.75	20.70	21.14	20.68	20.38	20.06	19.68	19.36	19.61	19.64
Alcohol-related diseases,	Male	7.25	8.05	8.91	9.60	10.57	11.52	11.78	11.93	13.03	13.16	14.41	14.09	14.44
excluding external causes	Female	4.01	4.26	4.67	4.88	5.34	5.63	5.95	6.09	6.39	6.45	6.62	6.89	6.71
Illicit drug use disorders	Male	0.84	1.10	1.28	1.64	1.81	2.33	2.71	2.62	2.93	2.77	2.47	2.47	2.66
	Female	0.19	0.19	0.25	0.29	0.35	0.46	0.44	0.36	0.52	0.47	0.52	0.48	0.48
Aortic aneurysm and dissection	Male	9.81	9.63	9.73	10.00	9.10	8.82	8.59	8.08	7.46	7.30	6.97	6.53	6.06
	Female	2.69	2.62	2.67	2.99	2.72	2.77	2.60	2.45	2.39	2.26	2.14	2.05	1.93
DVT with pulmonary embolism	Male	2.96	2.79	3.16	2.93	2.86	2.94	2.70	2.96	4.65	4.34	4.37	4.37	4.20
	Female	2.88	2.81	2.88	2.89	3.05	2.90	2.70	2.93	4.46	4.49	4.48	4.04	3.74
Influenza	Male	0.16	0.04	0.09	0.05	0.07	0.07	0.21	0.20	0.03	0.03	0.04	0.02	0.05
	Female	0.13	0.03	0.08	0.06	0.10	0.04	0.16	0.12	0.03	0.03	0.05	0.02	0.07
Pneumonia	Male	9.12	8.36	9.40	9.55	9.71	8.97	9.84	10.00	8.46	8.48	8.89	8.00	8.16
	Female	5.89	5.25	6.04	5.90	6.31	5.98	6.47	6.41	5.61	5.60	6.03	5.35	5.34
COPD	Male	23.48	20.35	22.08	20.14	20.11	19.16	19.72	17.75	15.74	15.00	15.72	13.94	14.37
	Female	13.19	11.35	13.05	12.66	12.64	12.47	13.05	11.62	10.94	10.78	11.77	9.94	10.30
Land transport accidents	Male	8.98	8.46	8.26	8.45	9.01	8.66	8.19	8.68	8.05	8.69	8.51	8.07	7.92
	Female	3.08	3.05	2.81	2.80	2.70	2.77	2.49	2.63	2.20	2.23	2.45	2.20	2.04
Accidental poisonings	Male	2.17	2.44	2.77	2.69	3.05	2.84	2.96	2.93	3.00	2.51	2.18	2.48	2.47
	Female	0.93	1.05	0.87	1.03	1.04	1.02	1.09	1.07	1.07	0.96	0.88	0.98	1.06
Falls	Male	2.26	2.31	2.21	2.46	2.57	2.31	2.35	2.60	2.64	2.49	2.50	2.48	2.64
	Female	1.01	0.88	0.94	0.99	1.20	0.97	1.00	1.12	1.17	1.09	1.12	1.16	1.10
Exposure to fire, smoke and flames	Male	0.83	0.63	0.64	0.73	0.83	0.69	0.68	0.63	0.56	0.56	0.65	0.51	0.41
	Female	0.39	0.38	0.36	0.40	0.37	0.42	0.30	0.31	0.28	0.39	0.32	0.29	0.25
Accidental drowning and submersion	Male	0.58	0.69	0.78	0.57	0.67	0.60	0.63	0.55	0.57	0.52	0.59	0.51	0.53
	Female	0.16	0.15	0.12	0.17	0.15	0.14	0.15	0.17	0.17	0.17	0.17	0.10	0.16
Fracture, cause unspecified	Male	0.26	0.30	0.16	0.19	0.16	0.20	0.15	0.20	0.17	0.12	0.15	0.12	0.17
	Female	0.20	0.20	0.19	0.18	0.21	0.17	0.26	0.17	0.13	0.15	0.15	0.17	0.17
Suicide and self inflicted injuries	Male	14.13	13.77	14.22	13.31	13.06	14.98	14.41	13.67	13.22	12.78	12.74	12.55	12.14
	Female	4.41	4.19	4.21	4.13	4.26	4.33	4.17	4.34	3.96	3.99	3.97	4.15	4.07
Homicide/assault	Male	1.61	1.71	2.04	1.96	1.88	1.90	1.95	2.12	2.62	2.14	2.18	2.41	2.25
	Female	0.89	0.99	0.91	0.88	0.76	0.84	0.80	0.87	1.00	0.87	0.95	0.83	0.86

Appendix 3

Avoidable Mortality: Standardised years of life lost rate per 10,000 population: Cause of death by year

Nolte and McKee Definition

Cause of death	Sex	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Intestinal infectious diseases	Male	0.73	0.63	0.69	0.63	1.04	1.30	1.12	1.03	0.14	0.10	0.18	0.31	0.50
	Female	0.67	0.78	1.07	0.63	0.95	1.00	1.39	1.30	0.16	0.17	0.32	0.24	0.43
Tuberculosis	Male	0.75	0.77	0.90	0.74	0.77	0.79	0.72	0.59	0.76	0.83	0.85	0.80	0.69
	Female	0.60	0.52	0.48	0.35	0.41	0.33	0.36	0.48	0.46	0.41	0.53	0.59	0.54
Other infections (diphtheria, other	Male	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
tetanus, acute poliomyelitis)	Female	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Whooping cough	Male	0.00	0.07	0.05	0.04	0.04	0.11	0.04	0.04	0.16	0.12	0.00	0.04	0.07
	Female	0.00	0.04	0.00	0.04	0.00	0.04	0.08	0.04	0.04	0.04	0.04	0.08	0.12
Septicaemia (streptococcal	Male	1.98	1.80	2.66	2.58	1.82	1.90	2.67	2.28	2.82	2.18	2.39	2.63	2.42
septicaemia, other septicaemia)	Female	1.18	1.35	2.11	1.70	2.27	1.92	2.00	2.21	1.95	1.92	2.05	2.29	1.80
Measles	Male	0.06	0.00	0.02	0.00	0.04	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00
	Female	0.01	0.00	0.00	0.00	0.02	0.03	0.00	0.02	0.02	0.04	0.00	0.00	0.00
Malignant neoplasm of colon and rectum	Male	17.63	16.28	16.44	15.94	15.18	14.69	13.67	13.50	13.40	13.25	12.47	12.23	11.81
	Female	12.12	11.23	10.73	10.42	9.92	9.47	9.59	9.25	8.55	8.05	8.29	7.95	8.03
Other malignant neoplasm of skin	Male	0.67	0.71	0.67	0.53	0.22	0.28	0.29	0.30	0.27	0.24	0.30	0.30	0.22
	Female	0.10	0.24	0.31	0.15	0.16	0.21	0.14	0.15	0.12	0.12	0.09	0.08	0.08
Malignant neoplasm of breast	Male	0.17	0.19	0.19	0.15	0.10	0.18	0.13	0.17	0.12	0.12	0.11	0.09	0.12
	Female	43.92	43.80	42.26	40.03	38.55	37.74	35.95	36.22	34.07	33.33	32.32	30.90	30.50
Malignant neoplasm of cervix uteri	Male	-	-	-	-	-	-	-	-	-	-	-	-	-
	Female	7.99	6.79	7.09	6.81	6.29	5.86	5.37	5.27	5.16	4.50	4.32	4.37	4.20
Malignant neoplasm of corpus	Male	-	-	-	-	-	-	-	-	-	-	-	-	-
uteri and uterus unspecified	Female	2.39	2.10	2.33	2.03	2.21	2.12	1.95	2.26	2.20	2.07	2.06	2.11	2.23
Malignant neoplasm of testis	Male	1.11	0.81	0.80	1.29	0.80	0.85	0.78	0.78	0.53	0.68	0.70	0.78	0.68
	Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Hodgkin's disease	Male	1.76	1.18	1.37	1.31	1.17	0.98	0.91	0.93	1.07	0.76	1.05	0.88	0.68
	Female	1.26	0.88	1.13	0.85	0.74	0.70	0.62	0.71	0.56	0.79	0.60	0.63	0.72
Leukaemia	Male	8.82	9.07	8.82	7.62	8.51	8.54	8.11	7.97	7.37	6.87	6.91	5.94	5.47
	Female	5.93	5.85	5.91	5.85	6.57	5.30	6.60	4.99	5.51	5.10	4.34	4.52	4.34
Disorders of thyroid gland	Male	0.20	0.16	0.08	0.05	0.15	0.11	0.17	0.04	0.03	0.03	0.10	0.08	0.06
	Female	0.32	0.20	0.24	0.21	0.14	0.23	0.27	0.14	0.12	0.16	0.11	0.11	0.13
Diabetes mellitus	Male	5.46	5.55	5.34	5.68	5.20	5.17	5.37	4.82	5.02	4.61	4.67	4.24	4.15
	Female	3.70	3.36	3.94	3.47	3.58	3.12	3.20	3.16	2.74	3.22	2.93	2.72	2.46
Epilepsy and status epilepticus	Male	5.68	5.75	5.14	6.54	6.08	6.06	5.79	6.17	6.08	5.62	6.06	5.44	5.97
	Female	3.90	3.63	3.90	3.29	3.85	3.71	3.77	3.32	3.99	3.36	3.66	3.57	3.61
Chronic rheumatic heart diseases	Male	0.88	0.75	0.82	0.73	0.67	0.59	0.79	0.68	0.63	0.54	0.57	0.59	0.61
	Female	1.31	1.54	1.39	1.12	0.99	0.90	1.06	1.04	0.86	0.68	0.74	0.73	0.60
Hypertensive diseases	Male	2.93	2.15	2.09	2.33	2.46	2.52	2.77	2.72	2.46	2.48	2.41	2.43	2.70
	Female	1.23	1.14	1.10	1.38	1.08	1.20	1.09	1.10	1.29	1.23	1.15	0.99	1.25
Ischaemic heart diseases	Male	142.13	127.37	122.74	117.24	109.96	105.25	97.71	91.55	88.18	84.51	80.05	74.67	69.63
	Female	37.67	34.02	32.34	31.09	29.37	27.93	25.69	24.07	22.92	21.87	20.64	17.98	17.26
Cerebrovascular diseases	Male	26.16	25.79	25.76	25.16	24.00	23.74	22.25	21.73	19.81	19.80	19.60	18.06	16.95
	Female	20.22	19.59	19.79	19.63	18.79	18.94	18.16	16.33	15.26	15.59	15.10	13.85	13.20
All respiratory diseases	Male	23.63	21.48	21.14	20.96	21.15	20.02	20.78	20.59	18.86	18.22	19.18	18.48	18.36
(excluding pneumonia and influenza)	Female	15.70	14.58	14.95	13.82	15.47	13.51	15.18	14.06	14.05	13.88	14.55	13.72	12.63
Influenza	Male	0.29	0.09	0.11	0.04	0.15	0.14	0.37	0.32	0.17	0.11	0.18	0.13	0.19
	Female	0.16	0.04	0.23	0.12	0.13	0.14	0.21	0.17	0.14	0.15	0.23	0.12	0.41
Pneumonia	Male	9.61	8.98	9.91	10.18	10.02	8.97	9.66	9.71	9.17	9.47	9.78	8.71	9.33
	Female	6.00	5.26	5.87	5.68	6.33	6.16	6.33	6.39	6.22	6.19	6.40	5.76	5.89
Gastric and duodenal ulcer	Male	2.69	2.71	2.38	2.81	2.89	2.56	2.93	2.52	2.52	2.72	2.75	2.71	2.67
	Female	1.43	1.31	1.47	1.40	1.36	1.29	1.38	1.41	1.39	1.45	1.21	1.26	1.18
Diseases of appendix	Male	0.26	0.15	0.12	0.16	0.22	0.24	0.23	0.32	0.16	0.33	0.28	0.28	0.18
	Female	0.18	0.14	0.24	0.05	0.09	0.15	0.22	0.11	0.29	0.20	0.17	0.17	0.16
Hernia	Male	0.39	0.26	0.34	0.30	0.23	0.28	0.39	0.44	0.28	0.37	0.28	0.42	0.37
	Female	0.26	0.23	0.26	0.29	0.29	0.26	0.20	0.33	0.28	0.22	0.42	0.39	0.28
Cholelithiasis and cholecystitis	Male	0.45	0.32	0.47	0.46	0.39	0.40	0.47	0.53	0.24	0.18	0.33	0.24	0.26
	Female	0.56	0.50	0.39	0.66	0.67	0.65	0.46	0.59	0.23	0.23	0.20	0.23	0.24
Nephritis and nephrosis	Male	1.05	1.10	0.95	0.91	0.94	0.84	0.86	0.71	1.61	1.57	1.48	1.38	1.28
	Female	0.81	0.65	0.71	0.65	0.50	0.59	0.54	0.69	1.32	1.10	1.01	1.28	1.05
Hyperplasia of prostate	Male	0.06	0.05	0.07	0.05	0.09	0.06	0.03	0.03	0.03	0.05	0.02	0.02	0.01
	Female	-	-	-	-	-	-	-	-	-	-	-	-	-
Pregnancy, childbirth and the puerperium	Male	-	-	-	-	-	-	-	-	-	-	-	-	-
	Female	0.53	0.81	0.77	0.81	0.67	0.73	0.47	0.58	0.74	0.63	0.70	0.73	0.75
Congenital malformations of	Male	6.84	6.72	6.43	6.59	7.13	6.22	5.81	5.63	5.62	5.51	4.90	4.94	5.22
the circulatory system	Female	6.65	6.29	5.49	5.05	5.44	4.87	5.03	5.04	4.91	4.06	4.22	4.19	4.21
Perinatal deaths, all causes, excluding stillbirths	Male	3.62	2.79	2.94	3.16	2.88	3.05	2.34	1.95	4.14	5.32	4.46	4.81	4.15
	Female	2.43	2.33	2.44	2.43	1.82	1.48	2.00	1.42	3.22	3.01	3.40	3.54	3.15
Misadventures to patients during	Male	0.46	0.41	0.38	0.39	0.37	0.51	0.45	0.44	0.47	0.48	0.50	0.38	0.44
surgical and medical care	Female	0.47	0.36	0.40	0.51	0.46	0.34	0.57	0.45	0.51	0.38	0.30	0.31	0.57

Appendix 3- *continued*

Avoidable Mortality: Standardised years of life lost rate per 10,000 population: Cause of death by year

Page, Tobias and Glover Definition

Cause of death	Sex	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Amenable to medical care														
Tuberculosis	Male	0.75	0.77	0.90	0.74	0.77	0.79	0.72	0.59	0.76	0.83	0.85	0.80	0.69
	Female	0.60	0.52	0.48	0.35	0.41	0.33	0.36	0.48	0.46	0.41	0.53	0.59	0.54
Selected invasive bacterial and protozoal infection	Male	5.55	4.40	6.29	6.69	5.60	5.61	6.34	5.63	6.78	5.20	5.79	4.67	5.54
	Female	4.00	3.82	5.05	5.26	5.75	5.15	5.05	5.05	4.90	3.96	4.46	4.43	3.68
Malignant neoplasm of colon and rectum	Male	17.63	16.28	16.44	15.94	15.18	14.69	13.67	13.50	13.40	13.25	12.47	12.23	11.81
	Female	12.12	11.23	10.73	10.42	9.92	9.47	9.59	9.25	8.55	8.05	8.29	7.95	8.03
Malignant melanoma of skin	Male	3.63	3.21	3.43	3.39	3.15	3.21	3.43	3.66	3.12	3.52	3.65	3.30	3.24
	Female	3.06	2.87	2.66	2.68	2.60	2.65	2.42	2.77	2.56	2.62	2.45	2.61	2.78
Other malignant neoplasms of skin	Male	0.67	0.71	0.67	0.53	0.22	0.28	0.29	0.30	0.27	0.24	0.30	0.30	0.22
	Female	0.10	0.24	0.31	0.15	0.16	0.21	0.14	0.15	0.12	0.12	0.09	0.08	0.08
Malignant neoplasms of breast	Male	0.17	0.19	0.19	0.15	0.10	0.18	0.13	0.17	0.12	0.12	0.11	0.09	0.12
	Female	43.92	43.80	42.26	40.03	38.55	37.74	35.95	36.22	34.07	33.33	32.32	30.90	30.50
Malignant neoplasm of corpus uteri and uterus unspecified	Male	-	-	-	-	-	-	-	-	-	-	-	-	-
	Female	2.39	2.10	2.33	2.03	2.21	2.12	1.95	2.26	2.20	2.07	2.06	2.11	2.23
Malignant neoplasm of cervix uteri	Male	-	-	-	-	-	-	-	-	-	-	-	-	-
	Female	7.99	6.79	7.09	6.81	6.29	5.86	5.37	5.27	5.16	4.50	4.32	4.37	4.20
Malignant neoplasm of bladder	Male	3.97	3.68	3.74	3.65	3.34	3.30	2.88	3.00	2.86	2.71	2.57	2.47	2.42
	Female	1.47	1.23	1.27	1.20	1.14	1.27	1.16	1.28	1.05	1.08	1.25	1.02	1.01
Malignant neoplasm of thyroid gland	Male	0.33	0.22	0.30	0.24	0.24	0.30	0.28	0.21	0.17	0.28	0.27	0.22	0.22
	Female	0.33	0.26	0.20	0.31	0.19	0.32	0.35	0.22	0.24	0.25	0.22	0.29	0.34
Hodgkin's disease	Male	1.76	1.18	1.37	1.31	1.17	0.98	0.91	0.93	1.07	0.76	1.05	0.88	0.68
	Female	1.26	0.88	1.13	0.85	0.74	0.70	0.62	0.71	0.56	0.79	0.60	0.63	0.72
Lymphoid leukaemia – acute/chronic	Male	3.43	3.87	3.50	2.93	3.64	3.81	3.41	3.16	2.97	2.77	2.25	2.15	2.17
	Female	2.07	1.66	1.89	1.96	2.12	1.51	2.26	1.66	1.87	1.66	1.25	1.45	1.24
Benign neoplasms	Male	0.72	0.48	0.88	0.91	0.79	0.82	0.63	0.73	0.35	0.52	0.40	0.51	0.38
	Female	0.88	1.01	0.81	0.97	0.74	0.64	0.90	0.66	0.46	0.41	0.53	0.58	0.58
Disorders of thyroid gland	Male	0.20	0.16	0.08	0.05	0.15	0.11	0.17	0.04	0.03	0.03	0.10	0.08	0.06
	Female	0.32	0.20	0.24	0.21	0.14	0.23	0.27	0.14	0.12	0.16	0.11	0.11	0.13
Diabetes mellitus	Male	5.46	5.55	5.34	5.68	5.20	5.17	5.37	4.82	5.02	4.61	4.67	4.24	4.15
	Female	3.70	3.36	3.94	3.47	3.58	3.12	3.20	3.16	2.74	3.22	2.93	2.72	2.46
Epilepsy and status epilepticus	Male	5.68	5.75	5.14	6.54	6.08	6.06	5.79	6.17	6.08	5.62	6.06	5.44	5.97
	Female	3.90	3.63	3.90	3.29	3.85	3.71	3.77	3.32	3.99	3.36	3.66	3.57	3.61
Rheumatic and other valvular heart disease	Male	1.11	1.00	0.97	0.87	0.82	0.72	0.80	0.71	0.63	0.54	0.57	0.59	0.61
	Female	1.68	1.92	1.67	1.37	1.17	1.08	1.07	1.08	0.86	0.68	0.75	0.76	0.60
Hypertensive diseases	Male	2.93	2.15	2.09	2.33	2.46	2.52	2.77	2.72	2.46	2.48	2.41	2.43	2.70
	Female	1.23	1.14	1.10	1.38	1.08	1.20	1.09	1.10	1.29	1.23	1.15	0.99	1.25
Ischaemic heart diseases	Male	142.13	127.37	122.74	117.24	109.96	105.25	97.71	91.55	88.18	84.51	80.05	74.67	69.63
	Female	37.67	34.02	32.34	31.09	29.37	27.93	25.69	24.07	22.92	21.87	20.64	17.98	17.26
Cerebrovascular diseases	Male	26.16	25.79	25.76	25.16	24.00	23.74	22.25	21.73	19.81	19.80	19.60	18.06	16.95
	Female	20.22	19.59	19.79	19.63	18.79	18.94	18.16	16.33	15.26	15.59	15.10	13.85	13.20
Nephritis and nephrosis	Male	1.05	1.10	0.95	0.91	0.94	0.84	0.86	0.71	1.61	1.57	1.48	1.38	1.28
	Female	0.81	0.65	0.71	0.65	0.50	0.59	0.54	0.69	1.32	1.10	1.01	1.28	1.05
Obstructive uropathy & prostatic hyperplasia	Male	0.37	0.24	0.25	0.22	0.30	0.25	0.20	0.22	0.21	0.17	0.18	0.21	0.16
	Female	0.10	0.19	0.19	0.13	0.12	0.17	0.14	0.13	0.24	0.23	0.20	0.16	0.19
Asthma	Male	3.28	3.41	2.34	3.09	2.77	2.43	2.71	2.62	2.16	2.68	2.04	2.37	1.80
	Female	3.30	3.01	2.94	2.40	2.81	2.61	2.86	2.68	2.39	2.54	2.03	2.30	1.77
Peptic ulcer	Male	2.71	2.72	2.40	2.83	2.90	2.56	2.95	2.53	2.54	2.74	2.75	2.74	2.69
	Female	1.44	1.32	1.47	1.41	1.36	1.29	1.38	1.41	1.40	1.45	1.21	1.26	1.19
Acute abdomen, appendicitis, intestinal obstruction, cholecystitis / lithiasis, pancreatitis, hernia	Male	2.09	2.21	2.46	2.34	2.31	2.47	2.51	2.65	2.97	3.05	3.21	2.96	2.50
	Female	1.48	1.51	1.33	1.55	1.45	1.63	1.48	1.44	1.82	1.58	1.76	1.83	1.68
Congenital malformations, deformations and chromosomal anomalies	Male	11.87	11.44	11.59	12.15	12.30	11.31	10.46	10.35	10.81	11.04	10.13	10.10	11.20
	Female	12.08	11.01	10.71	9.99	10.41	9.99	9.72	9.81	10.57	9.69	10.26	9.42	9.16
Complications of perinatal period	Male	3.62	2.79	2.94	3.16	2.88	3.05	2.34	1.95	4.14	5.32	4.46	4.81	4.15
	Female	2.43	2.33	2.44	2.43	1.82	1.48	2.00	1.42	3.22	3.01	3.40	3.54	3.15

Appendix 3- *continued*

Avoidable Mortality: Standardised years of life lost rate per 10,000 population: Cause of death by year

Page, Tobias and Glover Definition

Cause of death	Sex	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Preventable														
HIV/AIDS	Male	7.25	8.24	7.41	6.44	3.00	1.91	1.74	2.02	1.61	1.75	1.72	1.44	1.69
	Female	0.70	0.85	0.88	1.05	0.84	0.46	0.35	0.44	0.68	0.55	0.94	0.96	0.81
Viral hepatitis	Male	0.38	0.38	0.43	0.79	1.02	0.84	0.90	1.02	1.08	0.81	1.04	0.89	0.89
	Female	0.22	0.11	0.24	0.34	0.25	0.30	0.29	0.33	0.27	0.27	0.28	0.44	0.31
Malignant neoplasm of lip, oral cavity and pharynx	Male	3.99	4.59	3.60	4.26	3.86	4.41	4.39	3.71	4.06	4.00	3.69	4.32	4.16
	Female	1.43	1.48	1.28	1.32	1.49	1.33	1.56	1.45	1.52	1.54	1.50	1.39	1.36
Malignant neoplasm of oesophagus	Male	8.52	8.96	8.80	8.75	8.68	8.66	8.77	8.74	8.70	9.02	9.44	8.52	8.73
	Female	2.67	2.70	2.73	2.75	2.58	2.31	2.67	2.53	2.43	2.60	2.52	2.47	2.51
Malignant neoplasm of stomach	Male	8.64	8.37	7.59	7.84	6.36	6.72	6.45	5.54	5.33	5.06	5.01	4.42	4.51
	Female	3.28	3.55	3.20	3.00	3.09	2.77	2.56	2.48	2.59	2.20	2.25	2.47	2.20
Malignant neoplasm of liver	Male	2.71	2.79	2.72	2.67	3.08	2.69	2.83	3.06	3.07	3.04	3.26	3.33	3.32
	Female	1.53	1.34	1.51	1.42	1.46	1.34	1.43	1.55	1.34	1.47	1.52	1.73	1.62
Malignant neoplasm of trachea, bronchus and lung	Male	41.43	40.29	37.92	36.87	34.18	34.17	31.35	30.53	29.77	29.74	27.56	26.92	26.98
	Female	20.44	20.24	19.23	19.42	18.63	19.18	18.68	18.45	18.39	18.30	17.98	18.57	17.90
Alcohol-related diseases, excluding external causes	Male	13.54	15.20	16.85	18.68	20.47	22.87	22.97	23.13	25.91	25.69	27.99	27.01	27.39
	Female	7.39	7.93	8.67	9.21	10.04	10.53	11.84	11.86	12.39	12.46	12.84	13.26	13.09
Illicit drug use disorders	Male	3.83	4.94	5.68	7.34	7.96	10.25	11.91	10.97	12.35	11.94	10.36	10.00	10.58
	Female	0.80	0.89	1.07	1.34	1.54	2.00	1.97	1.55	2.31	2.11	2.17	2.10	1.93
Aortic aneurysm and dissection	Male	6.11	5.79	5.77	5.92	5.49	5.08	5.21	5.10	4.45	4.67	4.58	4.38	4.19
	Female	1.40	1.35	1.40	1.56	1.35	1.48	1.39	1.32	1.24	1.44	1.11	1.10	1.24
DVT with pulmonary embolism	Male	2.74	2.70	3.17	3.00	3.05	3.26	2.82	3.19	5.13	5.20	5.15	5.05	5.25
	Female	3.05	2.91	3.03	3.10	3.20	3.20	2.96	3.28	4.90	5.31	5.07	4.59	4.62
Influenza	Male	0.29	0.09	0.11	0.04	0.15	0.14	0.37	0.32	0.17	0.11	0.18	0.13	0.19
	Female	0.16	0.04	0.23	0.12	0.13	0.14	0.21	0.17	0.14	0.15	0.23	0.12	0.41
Pneumonia	Male	9.61	8.98	9.91	10.18	10.02	8.97	9.66	9.71	9.17	9.47	9.78	8.71	9.33
	Female	6.00	5.26	5.87	5.68	6.33	6.16	6.33	6.39	6.22	6.19	6.40	5.76	5.89
COPD	Male	12.65	10.89	11.86	10.66	11.00	10.48	10.75	10.49	9.02	8.44	9.55	8.83	9.05
	Female	8.14	6.61	7.72	7.23	7.63	6.89	7.73	6.77	6.58	6.41	7.38	6.11	6.25
Land transport accidents	Male	35.33	33.11	33.18	33.79	35.97	34.17	31.51	34.47	31.45	34.79	33.41	31.73	31.53
	Female	11.24	11.37	10.42	10.42	10.07	10.30	9.40	9.85	8.06	8.39	9.20	8.38	7.51
Accidental poisonings	Male	8.30	9.19	10.66	10.24	11.92	10.87	11.35	11.28	11.24	9.62	8.19	9.05	8.89
	Female	2.97	3.31	2.91	3.46	3.19	3.47	3.67	3.49	3.48	2.97	2.69	3.16	3.43
Falls	Male	5.13	4.90	5.06	5.07	5.56	4.65	4.89	5.39	5.32	4.97	4.87	4.50	4.88
	Female	1.83	1.31	1.43	1.68	1.94	1.72	1.65	1.87	1.94	1.74	1.97	1.87	1.76
Exposure to fire, smoke and flames	Male	3.18	1.96	2.15	2.45	2.76	2.21	2.17	2.00	1.92	1.98	2.09	1.54	1.26
	Female	1.24	1.30	1.35	1.38	1.21	1.39	1.12	0.98	0.88	1.26	0.84	0.95	0.82
Accidental drowning and submersion	Male	2.70	2.87	3.18	2.36	2.85	2.40	2.51	2.24	2.16	1.99	2.28	1.78	2.05
	Female	0.65	0.59	0.44	0.72	0.53	0.46	0.51	0.66	0.78	0.69	0.70	0.34	0.54
Fracture, cause unspecified	Male	0.36	0.49	0.21	0.16	0.11	0.10	0.20	0.15	0.08	0.07	0.10	0.06	0.12
	Female	0.21	0.18	0.15	0.13	0.12	0.07	0.15	0.08	0.05	0.05	0.03	0.06	0.07
Suicide and self inflicted injuries	Male	45.76	45.00	46.69	43.54	43.67	50.79	47.12	45.01	42.72	41.33	41.24	39.89	38.00
	Female	12.51	12.12	12.48	12.61	12.56	13.08	12.52	13.03	11.76	12.26	12.04	12.29	12.23
Homicide/assault	Male	6.56	6.61	8.14	7.77	7.71	7.39	7.80	8.87	10.97	8.57	8.76	9.56	8.89
	Female	3.75	4.39	3.79	3.86	3.18	3.62	3.39	3.87	4.31	3.57	4.12	3.34	3.63

Socio-economic inequalities in smoking: an examination of generational trends in Great Britain

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This article examines pseudo-cohort trends in socio-economic inequalities in smoking behaviour.

People born in 1926–1950 living in manual households were more likely to become smokers than those in non-manual households, but both groups subsequently gave up smoking at similar rates.

Those in the 1956–1985 birth cohorts were less likely to smoke than people born earlier, but they were also less likely to give up. The rates of giving up among the non-manual group declined slightly compared with those born earlier. However there was a dramatic change for the manual group compared with earlier cohorts; the vast majority remained smokers, with rates stabilising around 45 per cent for men and 40 per cent for women.

Introduction

Health inequalities currently exist in Great Britain. Although the health of the nation has improved, health improvements have been greatest among those in more privileged social circumstances, so that the relative difference between those at the top and bottom ends of the social scale has widened.[1]

The Government is committed to tackling health inequalities and has set a national target for England to reduce inequalities in health outcomes.[2] Smoking is the largest single cause of preventable deaths in the UK and is the main contributor to higher death rates in the manual as compared with the non-manual group.[1] Reducing inequalities in smoking is therefore crucial in tackling health inequalities in general. Consequently, the Government has set targets for England, not only to reduce the overall prevalence of cigarette smoking among adults,[3] but also to reduce the proportion of smokers in households headed by someone in manual employment.[4]

This article examines pseudo-cohort trends in smoking behaviour for men and women living in households headed by someone in manual employment compared with non-manual employment. Pseudo-cohort analyses track the average experiences of people who were born in the same time period, unlike conventional longitudinal analysis where the same individuals are tracked from year to year.

Data and methods

The aim of this article is to examine how smoking behaviour varies with age, and to identify the extent to which this pattern changes for different birth cohorts. A traditional way of tracking a cohort over time

is to use panel data, where information on the same individual, such as their smoking status, is obtained at different points over their lifetime. However, there is no single source of longitudinal data in Great Britain which both contains a reliable measure of smoking status and covers a range of birth cohorts. Instead the General Household Survey (GHS) was used to generate pseudo-birth-cohorts.

Pseudo-cohort analyses track the average experiences of people who were born in the same time period. As the GHS is a cross-sectional survey, the average experiences of respondents in a given survey year are taken to represent the experiences of their particular birth cohort, at that age. For example, people aged 20–24 in the 1980 GHS survey, are taken as being representative of the birth cohort born in 1956–1960. The same birth cohort is then represented by people aged 21–25 in 1981, and 22–26 in 1982, and finally by those aged 44–48 in 2004.

One of the main advantages of using pseudo-cohort analysis for this research is that, by making use of data that are already available, questions can be address that would not otherwise be addressed due to lack of longitudinal data over a sufficiently long period. The main disadvantage is that looking at the average experience of a cohort, rather than tracking the same individual, limits the interpretation of the results. Davy (2006) discusses pseudo-cohort analysis and its advantages and disadvantages in more depth, and explains how to interpret a pseudo-cohort chart.[5]

Pseudo-cohort analysis was conducted on a dataset that was created by the Office for National Statistics by combining GHS data from 1972 to 2004/05.[6] Exactly the same methods and data were used as in Davy (2006),[5] with the exception that analysis presented here compares data for people living in manual households with those living in non-manual households. Data were weighted for non-response. The sample was divided into five-year birth cohorts. For each sex by Socio-Economic Group combination (for example manual men) there is an average of 5,750 respondents in each cohort group and a minimum of at least 1,000, with the smallest number of cases in the 1981–1985 cohort. Three-year moving averages were used to lessen the effects of random fluctuations due to a small sample size. In other words those aged 17 actually represent those aged 16, 17 and 18, and data presented for age 18 are derived from data for those aged 17,18 and 19 years old, and so on. Each year of age available for each cohort is plotted on the pseudo-cohort graphs. A description of the significance testing is given in Appendix A.

In this analysis the assumption is made that, allowing for sampling error, an increase in smoking prevalence by age results from people taking up smoking, a decrease results from people giving up smoking and a stable prevalence rate indicates no change in smoking behaviour. However, no change in smoking prevalence with increasing age could be due to either no change in smoking habits, or due to non-smokers starting to smoke and being replaced by a corresponding number of smokers who stop. If this analysis was based on true cohorts, where the same individual was tracked over time, this would be known for certain. However, given that very few people take up smoking for the first time after the age of 25 the assumptions made in this pseudo-cohort analysis are justified.[7]

Another possible reason for smoking prevalence being lower among older people is the differential death rates between smokers and non-smokers. Therefore the pseudo-cohort graphs have been adjusted to account for this.[8] Without this adjustment the percentage who smoked would decline in the older age groups because, on average, smokers die before non-smokers and therefore, out of those who are alive, a smaller percentage smoke.

This analysis uses Socio-Economic Group (SEG) of Head of Household / Household Reference Person (referred to from now on as Household SEG). SEG was the main measure of socio-economic status used by the GHS until 2001, when it was replaced by the new National Statistics Socio-Economic Classification (NS-SEC). SEG continues to be used for monitoring progress towards smoking reduction targets. SEG is derived from occupational unit group, employment status and size of establishment. For more information on SEG see Appendix A of *Living in Britain: Results from the 2000 General Household Survey*. [9]

There are three levels of SEG: the full version, the collapsed seven group version and the two group version. This analysis uses the two group version which splits the categories into manual and non-manual. Using a larger number of SEG groups would have given cell sizes too small for this analysis.

There are various criticisms of using SEG as an indicator of a person's socio-economic position. A review of Government social classifications found that:

> "there was no explanation available at all concerning the conceptual basis of SEG…SEG also relied on outmoded distinctions – those of skill and the manual/non-manual divide. Partly as a consequence of this, SEG reflected women's positions in the social structure very inadequately." (p2–3)[10]

In addition, not every respondent can be classified as manual or non-manual. People whose occupation was inadequately described, the Armed Forces and full time students fall into this category and so they have been excluded from this analysis. There have also been changes in the measurement of household SEG which affect its comparability over time.

Despite all these problems SEG still remains a potent marker of socio-economic position which is useful for summarising complex data. SEG, or an approximation of SEG, exists on almost all years of the survey. Previous research has shown SEG to be a valid discriminator of health outcomes between social groups.[9] Although SEG does not have an explicitly stated conceptual basis, it is close to both the Goldthorpe Schema and to NS-SEC in its structure as it takes account of employment status, size of employing organisation and occupation.[10]

When analysing SEG it is possible to look at individual SEG, or SEG where married or cohabiting women take their husbands or partners SEG, or household SEG (where all adults in the household are classified by the SEG of the Head of Household / Household Reference Person).

The associations between smoking and SEG are similar, whether looking at a household or an individual measure. However, this analysis uses household SEG for the following reasons:

- Consistency
  The version of SEG which classifies married and cohabiting women according to their husband's or partner's occupation, but non-married women and other adults in the household according to their own, is not consistent as it does not classify all members of the household in the same way. Using household SEG is a more consistent approach.

- Appropriateness
  It can be argued that household SEG is more likely to reflect the living standards of the individual, and that smoking is more likely to be associated with living standards than with anything specifically to do with the individual's job. This may be particularly true for women, who are more likely than men to work in jobs which do not reflect their living standards. Rose and Pevalin (2003)[10] argue that: "many analyses would be improved if, when appropriate, researchers employed the household rather than the individual as the unit of class composition … the family is the basic class structure element because of the interdependence and shared conditions of family

members ... a family member's own class position may have less relevance to his/her life chances than the position of another family member." (p.21)

- Comparability
  Since 1992, data published in the GHS report *Living in Britain* have mainly been based on a household, rather than an individual, socio-economic measure.[9] The Government targets on smoking cessation are also based on the household measure.

When analysing SEG it is important to understand how it has changed over time. Box 1 lists changes in how the SEG variable was created or coded.

In the rest of this article, the terms 'manual' and 'non-manual' are used to describe those living in a household headed by someone in manual or non-manual employment respectively.

The proportion of people classified as manual or non-manual changes over time. Over the period of study there was a steady decrease in the proportion of manual, and an increase in the proportion of non-manual households. Therefore the overall number of people living in a manual household has declined. The trend is similar for men and women. The total proportion of missing cases is relatively stable. Weighting for non-response has minimal impact on the percentage classified as manual or non-manual.

This article builds upon analysis by Evandrou and Falkingham[11] in several ways. Firstly, it uses eight additional years of data and thus covers more recent birth cohorts; secondly, it takes into account differential mortality of smokers and non-smokers; and thirdly, it uses a different definition of SEG, using that of the household rather than the individual. Despite these differences similar trends are found.

Results

Time trend analysis

Before considering the results of the pseudo-cohort analysis it is useful to look at the GHS data analysed by year, the traditional way in which cross-section data are analysed (Figure 1). The time trend analysis shows

Box one

Changes in the construction of the household SEG variable

Standard Occupation Classification

SEG is based on classifying occupations. Occupations change over time; new jobs develop, and existing occupation evolve. Hence, every ten years there is a revision of the Standard Occupation Classification (SOC) which underpins the SEG grouping. Thus the population distribution by SEG has changed over time.

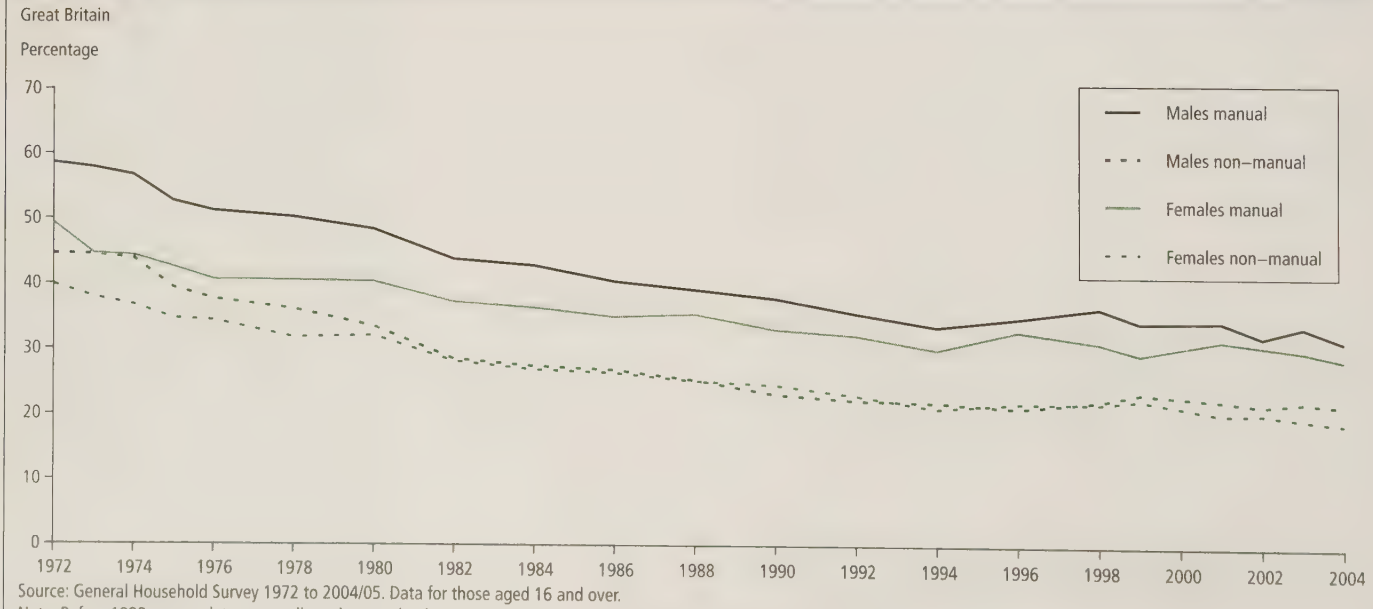
Head of Household changed to Household Reference Person

In analysis it is useful to select one person in the household to indicate the characteristics of the household more generally. In the past the reference person was defined as the Head of Household – the eldest householder, with men taking precedence over women in the case of couples or non-related joint householders. Because of the overt sexism involved in this definition, from 2000 the GHS (along with other government surveys) replaced the Head of Household with the Household Reference Person. The Household Reference Person is defined as the person in whose name the accommodation is owned or rented, or if there are joint householders the person with the highest income, or if both householders have exactly the same income, the older person. This definition increases the likelihood both that a woman will be selected as the reference person and that the reference person better characterises the household's social position. Analysis using the 2000 GHS found that in 14 per cent of households the Household Reference Person was a different person from the one that would have been selected using the Head of Household definition.[9]

Change to NS-SEC

From April 2001, NS-SEC replaced SEG. This change has resulted in a discontinuity in time series data. However, the operational categories of NS-SEC can be aggregated to produce an approximated version of the previous SEG. These approximations have been shown to achieve an overall continuity level of 87 per cent.[12] The Department of Health have used this approximated version of SEG in order to monitor its targets and some tables produced by the GHS team also use this variable. This variable has also been used in this analysis.

Figure 1 Prevalence of current cigarette smoking: by year, sex and socio-economic group



Source: General Household Survey 1972 to 2004/05. Data for those aged 16 and over.
Note: Before 1988, survey data were collected over calendar years. From 1988 onwards, data were collected over financial years.

that men and women in manual households have always been more likely to smoke than those in non-manual households. All groups have shown a decline in smoking prevalence from 1972 to 1994, after which the decline slowed or stopped. Rates of decline among the manual groups and non-manual groups were similar, although women show a slightly slower rate of decline than men. Unlike the pseudo-cohort analysis presented below the data have not been adjusted for differential death rates.[13]

Pseudo-cohort analysis

Men

Figure 2 presents smoking prevalence by age for 12 five-year pseudo-birth-cohorts. One pattern that is immediately observable from the graphs is that, after the initial take up stage, smoking prevalence was higher among manual than among non-manual men in all cohorts. There is also a striking difference in the patterns of taking up and of giving up smoking between the older cohorts (men born 1926–1950, Figure 2a-e) and the more recent cohorts (born 1956–1985, Figure 2g–l). The 1951–1955 cohort (Figure 2f) represents the transitional stage between the distinct patterns for the older and recent cohorts. These three stages are described below.

Stage 1 (1926-1950 cohorts, Figure 2a-e)

The overall pattern previously described by Davy (2006)[5] showed that, for men born in the first half of the 20th century the proportion of smokers at any given age decreased with subsequent cohorts. The current analysis shows that this was the case for both the manual and non-manual groups.

Within each cohort smoking prevalence steadily declined with age as people gave up smoking. Rates of decline with advancing age are similar for the manual and non-manual groups.

Because the data series begins in the 1970s there is no information for older cohorts for the period when they were teenagers and young men. In fact for the 1926–1930 cohort (Figure 2a) there are data only for men aged 43 or older. However, by piecing together the evidence from all of the older cohorts, all with consistent differentials in smoking rates between the two social groups, it is clear that manual men reached a higher prevalence of smoking than non-manual men at a relatively young age.

The percentage of men who have ever smoked is high for the oldest cohort (people born in 1926–1930, Figure 2a); at the very least 66 per cent of the manual group and 46 per cent for the non-manual group in this cohort have ever smoked. From this graph it can be speculated that the percentage of people who have ever smoked has declined over subsequent cohorts. This is supported by other analysis.[14]

Stage 2 (1951–1955 cohort, Figure 2f)

Smoking prevalence among young manual men in the 1951–1955 cohort (Figure 2f) was lower than in previous cohorts, but subsequently declined at a slower rate. In other words, although the uptake of smoking decreased, fewer manual smokers were then giving up the habit. The rate of decline with age for non-manual men was the same as in previous cohorts so the difference in smoking prevalence between the manual and the non-manual group widened as this cohort of men aged.

Stage 3 (1956–1985 cohorts, Figure 2g–l)

For manual men born 1956–1975 (Figure 2g–j) there was an initial increase in smoking prevalence as they took up smoking, after which there was no dramatic decline with age, with rates fluctuating around 45 per cent, suggesting that the vast majority of manual men that started smoking remained smokers. Non-manual men, on the other hand, still showed a distinct decline in smoking rates with age across all cohorts, although the rate of decline had slowed compared with earlier cohorts.

For the 1976–1980 and the 1981–1985 cohorts (Figure 2k–l) data are available only up to the ages of 27 and 22 respectively, but the same pattern seems to be emerging as is evident for the 1956–1975 cohorts (Figure 2g–j).

Unlike the earlier cohorts, these recent cohorts have data for teenagers. Comparing the 1956–1960 cohort (Figure 2g) with the 1981–1985 (Figure 2l) cohort it can be seen that smoking rates at age 17 have declined for both the manual and non-manual groups, but that the decline has been greater for the manual group. For every cohort, 17-year-old men in the manual group had higher smoking prevalence rates than in the non-manual group: for example, 17-year-olds born 1956–1970 living in manual households were about a third more likely to smoke than those in non-manual households (Figure 2g–i). However, the difference is much smaller for those born 1971–1985 (Figure 2j-l) and is not statistically significant (Appendix A). The differential take up rates for manual compared with non-manual groups explain some of the difference in smoking rates for the 1956–1970 cohorts, but explain little or no difference for men born 1971–1985.

Comparing differences between each successive cohort shows that in recent cohorts smoking rates are more stable from one cohort to the next than was the case for people born earlier. In the older cohorts the proportion of smokers at any given age fell for both manual and non-manual men in each successive cohort. In the recent cohorts, however, (1956–1985, Figure 2g–l) the reduction in rates between successive cohorts slowed and then stopped for both the manual and non-manual groups. For men in the manual group born since the mid-1950s smoking rates at a given age have so far been similar regardless of when they were born.

Women

The pattern for women is similar to the pattern for men (Figure 3). Although smoking rates in the manual groups were, on average, slightly higher for men than women, the confidence intervals for these two groups tended to overlap suggesting that the differences between men and women were either not statistically significant or very slight (Appendix 1).

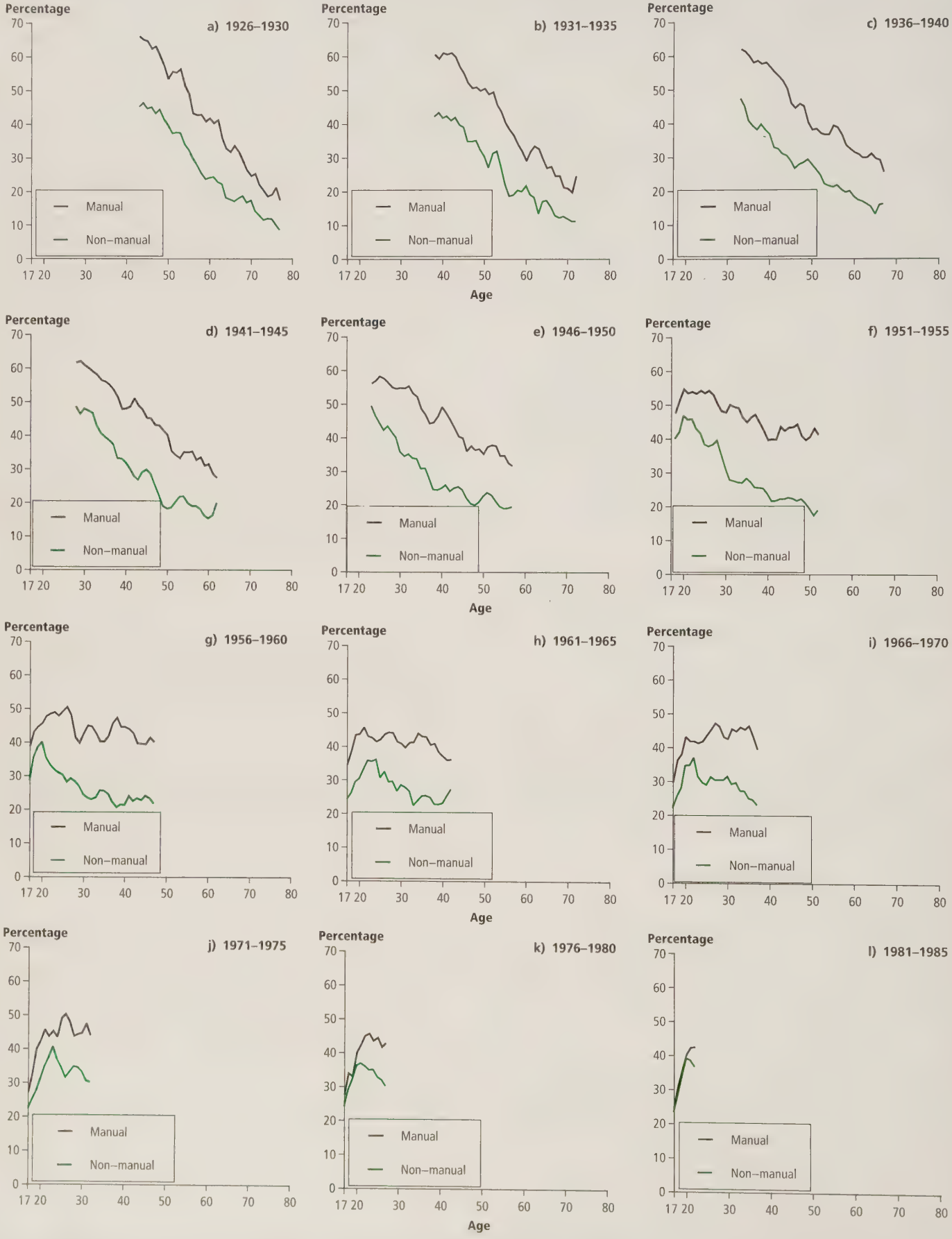
Levels of smoking were higher for manual than for non-manual women for every cohort and at nearly every age. However, while every cohort of non-manual women experienced a decline in smoking rates with age this decline was less evident for more recent cohorts among women in the manual group. This divergence in the patterns of smoking over the life course between manual and non-manual women is similar to that described above for men.

The notable differences between women and men are that:

- Among both men and women in manual households born 1956–1985 the rates of smoking appear to plateau for those in their mid-twenties onwards, but for women, the rate at which the figure stabilises is at about 40 per cent, which is lower than the equivalent rate of 45 per cent for men.
- Women born 1956–1970 (Figure 3g–i) have a clear initial peak and then a drop before stabilising, whereas this peak is less clear or non-existent for men born in the same period.

Figure 2 Prevalence of male current cigarette smoking: by birth cohort, age and socio-economic group

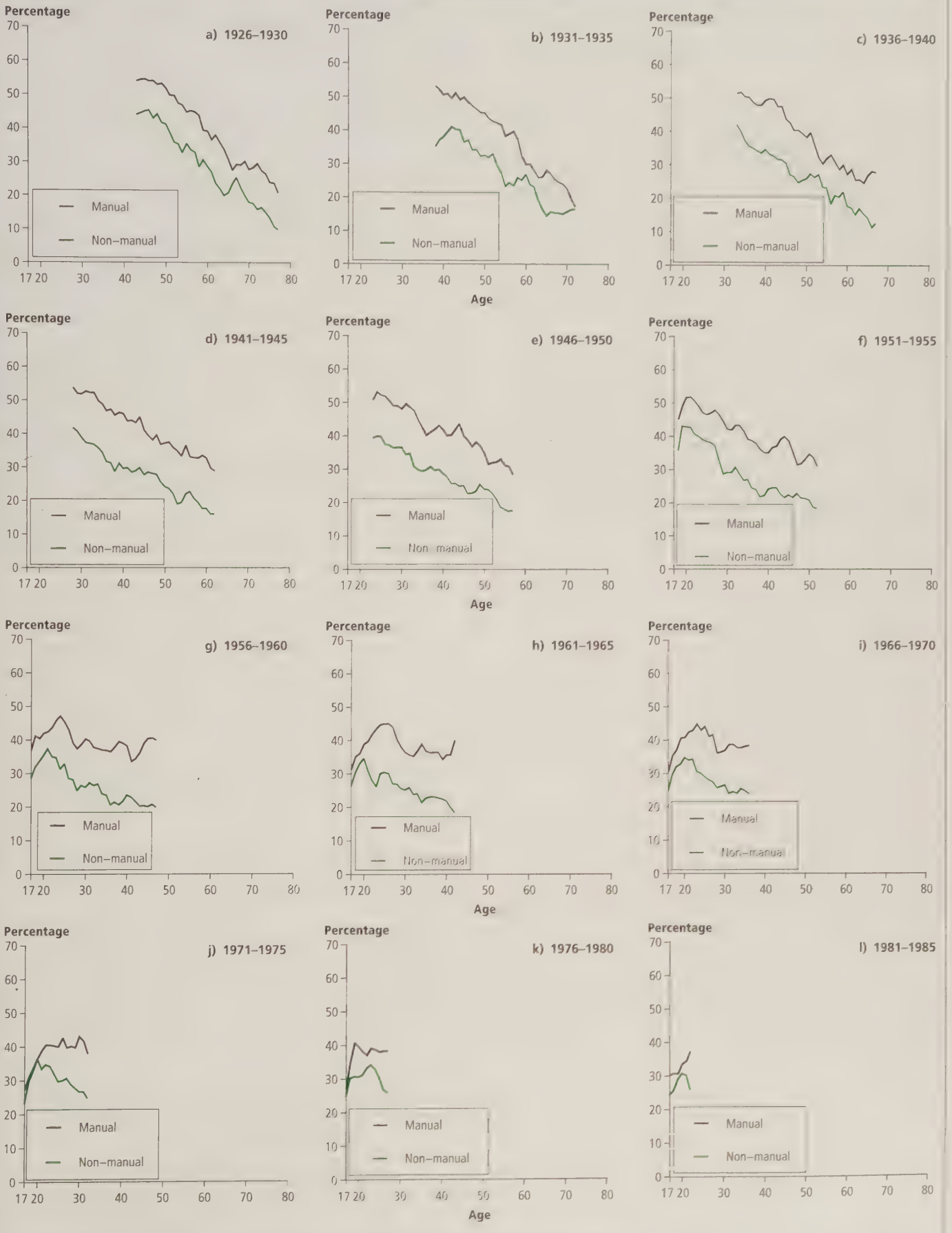
Great Britain



Source: General Household Survey 1972 to 2004/05, using three year moving averages and adjusted for differential death rates.

Figure 3 Prevalence of female current cigarette smoking: by birth cohort, age and socio-economic group

Great Britain



Source: General Household Survey 1972 to 2004/05, using three year moving averages and adjusted for differential death rates.

Discussion

Time trend analysis shows that a larger percentage of men and women in manual than non-manual households smoke. This article confirms that this is also true for each of the pseudo-cohorts analysed (with the exception of teenagers and those in their early twenties in the most recent cohorts where there was little or no difference in smoking rates between those in manual compared with non-manual households).

Previous pseudo-cohort analysis has shown that for people born in the first half of the 20th century the prevalence of smoking was always less than for each previous five-year cohort, a trend which then slowed or stopped for people born later. This article shows that the same pattern is seen when considered for manual and non-manual men and women.

There are different patterns of smoking in the cohorts born in the first and second halves of the 20th century. From a relatively young age people born in the first half of the 20th century (1921–1950) living in manual households were more likely to smoke than those in non-manual households, but both groups then gave up smoking at similar rates.

Manual and non-manual men born more recently (1956–1985) were less likely to smoke than those born earlier, but they were also less likely to give up than earlier cohorts. Among these cohorts the rates of giving up among the non-manual group declined slightly, but the pattern of behaviour for the manual group was completely different. Unlike earlier cohorts, the vast majority of manual men and women who started smoking remained smokers, with rates stabilising around 45 per cent for men and 40 per cent for women. Therefore, among people born more recently, inequalities in smoking prevalence between the manual and non-manual group increase with age within each cohort.

Analysing data using pseudo-cohorts, as opposed to only using time trend analysis, can throw light on likely future smoking trends. Time trend analysis looks at the smoking rates at a specific point in time, and is therefore an average of the experiences of people from different birth cohorts. Pseudo-cohort analysis makes it possible to disentangle the impact of the earlier cohorts from more recent cohorts. As time progresses the effects of the older cohorts on current smoking prevalence will lessen as these people die. Therefore it is most important to look at the trends that are occurring for the most recent cohorts when considering what future smoking trends might look like. This is particularly important in this analysis as there is a distinct change in smoking patterns for older cohorts compared with newer cohorts.

Although it is impossible to predict the future reliably as there are so many unknown factors which may influence behaviour (such as changes in policies or acceptability) it is useful to theorise what future smoking trends would be, assuming the current patterns continue. A few things remain unknown. Firstly, we cannot know what will happen to smoking trends for each cohort as it ages, although informed guesses can be made based on the patterns emerging from the data. Secondly, we cannot predict smoking trends for cohorts for which there are currently no data (those born after 1985). Again we can make predictions based on emerging patterns but since we know nothing about these groups any predictions are based on the behaviour of previous cohorts which is far more speculative.

The analysis suggests that smoking prevalence rates for manual men and women appear to be stabilising. In the 1956–1960 cohort there are data up to the age of 47 and in this cohort the majority of manual men and women who started smoking have remained smokers. For cohorts that were born more recently the oldest age for which we have information is even lower (for example up to the age of 42 for the 1961–1965 cohort and only up to the age of 27 for the 1976–1980 cohort). However, the pattern emerging for these cohorts is similar to the pattern for the 1956–1960 cohort. If smokers in the most recent cohorts follow similar age-related patterns to the 1956–1960 cohorts then this would mean that the majority of manual smokers would remain smokers, and that the gap between the smoking prevalence of manual and the non-manual group would not reduce. If this does occur then this would have implications as to whether the Government will meet its inequality target for England, namely to reduce the proportion of smokers in households headed by someone in manual employment. This may also have impacts on the overall target for England to reduce the proportion of adults who smoke. However, Government legislation, such as all enclosed public places and workplaces becoming smoke free from 1 July 2007[15] and the raising of the legal age of buying tobacco from 16 to 18 from 1 October 2007,[16] may well have an impact on future smoking trends.

Richard Doll's 50 year study of male British doctors[17] found that smokers born between 1900 and 1930 who had smoked their entire adult life, died on average ten years younger than lifelong non-smokers. However, if they gave up smoking at age 30 they had the same life expectancy as lifelong non-smokers. There were also health gains for men who gave up at age 40, 50 or 60 years of about nine, six or three years of life expectancy respectively compared with men who continued to smoke.

It is therefore important to look at smoking behaviours among people aged over 30 in order to assess long term health risks. For older cohorts, although take up rates were much higher than for people born more recently, the fact that many had given up by age 30 or 40 means that for these ex-smokers the reduction in their life expectancy would be relatively minimal. For the manual group, although there have been dramatic drops in the percentage of younger people who smoke among recent compared with older cohorts, the fall among people age over 30 was less dramatic as the majority of smokers did not give up the habit. If the smoking behaviours of the manual group continues and they are resistant to giving up smoking at any age then rates of smoking among older people would be higher compared with previous generations. This would have implications for the life expectancy of the manual group, and may mean there is no improvement in smoking related deaths, despite a reduction in smoking take up rates.

GHS smoking data have been extensively analysed over the years. However re-analysing the same data using pseudo-cohort analysis can improve understanding of how trends in smoking have changed. Pseudo-cohort analysis, as opposed to time trend analysis, may be more important from a health promotion and policy development viewpoint because it gives better understanding of how smoking prevalence varies by age over the life course, which social groups to target for interventions, and provide an insight into how smoking rates may evolve in future generations.

Key findings

- A larger percentage of people in manual households smoke compared with those living in non-manual households. This is true for all years and for all pseudo-cohorts analysed (with the exception of teenagers and those in their early twenties in the most recent cohorts).
- For both manual and non-manual men and women the prevalence of smoking reduced with each subsequent cohort for people born in the first half of the 20th century (1926–1955), a trend which then slowed or stopped for people born later.
- There are different patterns of smoking in the cohorts born in the first and second halves of the 20th century.
- People born in the first half of the 20th century (1926–1950) living in manual households were more likely to smoke than those in non-manual households, but both groups gave up smoking at similar rates.
- People born more recently (1956–1985) were less likely to have started to smoke than were people born earlier, but they were then less likely to give up. The rates of giving up among the non-manual group declined slightly, but the vast majority of manual men and women who started smoking remained smokers.

References

1. Department of Health (2002) *Tackling health inequalities: Cross cutting review*, TSO: London.

2. Department of Health (2004) *Technical Note for the Spending Review 2004 Public Service Agreement 2005-2008*. Available at: www.dh.gov.uk/assetRoot/04/08/69/19/04086919.pdf

3. Department of Health (1998) *Smoking Kills: A White Paper on tobacco. Saving lives: Our Healthier Nation*, TSO: London. Available at: www.archive.official-documents.co.uk/document/cm41/4177/4177.htm

4. Department of Health (2000) *The NHS cancer plan*, TSO: London. Available at: www.publications.doh.gov.uk/cancer/cancerplan.htm

5. Davy M (2006) Time and generational trends in smoking among men and women in Great Britain, 1972–2003/04, *Health Statistics Quarterly* **32**, 35-43.

6. Uren Z (2006) The GHS Pseudo Cohort Dataset (GHSPCD): Introduction and Methodology. *Survey Methodology Bulletin*, **59**, 25–37. Available at: www.statistics.gov.uk/cci/article.asp?ID=1637

7. Goddard E (2006) *Smoking and drinking among adults, 2005* (table 1.25) Available at: www.statistics.gov.uk/downloads/theme_compendia/GHS05/GHS2005_SmokingandDrinking_Report.pdf

8. For more details see Appendix A of: Davy M (2006) Time and generational trends in smoking among men and women in Great Britain, 1972-2003/04, *Health Statistics Quarterly* **32**, 35-43.

9. Walker A, Maher J, Coulthard M, Goddard E and Thomas M (2001) *Living in Britain: Results from the 2000 General Household Survey*, TSO: London. Available at: www.statistics.gov.uk/lib2000/index.htm

10. Rose D and Pevalin D (eds.) (2003) *A researcher's guide to the National Statistics Socio-economic classification*, SAGE: London.

11. Evandrou M and Falkingham J (2002) Smoking behaviour and socio-economic status: a cohort analysis, 1974–1998, *Health Statistics Quarterly* **14**, 30–39.

12. Office for National Statistics (2005) *The National Statistics Socio-economic Classification User Manual*, Palgrave Macmillan: Basingstoke. Available at: www.statistics.gov.uk/methods_quality/ns_sec/downloads/NS-SEC_User_2005.pdf

13. It should be noted that in 1972 19 per cent of cases have a missing value for SEG as the questions used to create this variable were not asked of some retired people. This probably has little impact on the overall analysis. Once the missing values have been excluded the percentage in each of the manual and non-manual groups for both men and women were as expected when compared with data from other years.

14. Goddard E (2006) *Smoking and drinking among adults, 2005* (table 1.3) Available at: www.statistics.gov.uk/downloads/theme_compendia/GHS05/GHS2005_SmokingandDrinking_Report.pdf

15. See: www.gnn.gov.uk/environment/dh/ 'Health Secretary announces date England will go smokefree' (1 December 2006)

16. See: www.gnn.gov.uk/environment/dh/ 'Minimum legal age to purchase tobacco to rise from 16 to 18' (1 January 2007)

17. Doll R, Peto R, Boreham J and Sutherland I (2004) Mortality in relation to smoking: 50 years' observations on male British doctors, *British Medical Journal* **328**, 1519.

Appendix 1 Significance testing

95 per cent confidence intervals were produced around each line on the graphs in Figure 2 and 3 to determine whether the differences between manual and non-manual lines were significant. Equivalent graphs were produced comparing men and women for the manual group and then the non-manual group (not shown). If the 95 per cent confidence intervals around two rates do not overlap then the two rates are significantly different at the 5 per cent level. T-tests were used to test for significant differences at age 17.

The confidence intervals and t-test calculations included a design factor, or deft, which is used to give an indication of the effect of the clustering on the reliability of estimates. These vary for men and women. We use the published GHS defts for male current smokers aged 16 and over (1.07) and for female current smokers aged 16 and over (1.13) (The defts were taken from Table C.10, GHS 2004, Appendix C at: www.statistics.gov.uk/statbase/Product.asp?vlnk=5756). We made the assumption that these defts would also be appropriate to use for the manual and non-manual sub-groups.

Comparison of the manual with the non-manual smoking prevalence for either men or women found very few instances where the confidence intervals overlapped over the age of 25 (the age at which the majority of smokers have established their habit). In other words, for most ages, the manual/non-manual difference in rates were statistically significant for all cohorts above the age of 25. Conversely, comparison of the sex differences in rates among non-manual or manual groups the confidence intervals overlapped in nearly all cases. In other words, for all cohorts the sex differentials within a social group were not statistically different.

Inequalities in health expectancies in England and Wales – small area analysis from the 2001 Census

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Office for National Statistics

This study investigates inequalities in the expectation of life without disability and life in good health using 2001 Census data at small area (ward) level for England and Wales. Inequalities were examined both nationally and within regions by computing life expectancies and health expectancies in groups of wards (twentieths) aggregated according to the Carstairs deprivation score. The results showed that the inequality gaps were significantly larger for health expectancies compared with life expectancy; they were wider for disability-free life expectancy than healthy life expectancy; and, for all measures, were wider for males. Within regions, the gradient in health inequalities with increasing deprivation varied. Those living in the least deprived wards had similar levels of health expectations across all regions. There was more geographical variation in the most deprived areas with lowest health expectations in the northern regions.

Introduction

Over the last century, there have been rapid improvements in mortality rates resulting in life expectancy at birth of 77 years for males and 81 years for females in England and Wales in 2003–2005. But the gains in life expectancy have occurred at different rates for different population groups. As a result, there exist wide variations in life expectancy by sex, social class and area of residence; and in some cases these inequalities have widened over the last three decades.[1] Tackling health inequalities is a high priority for the Government which has put in place a comprehensive programme of action to address them. Specific targets have been set to narrow gaps between geographical areas and socio-economic groups.[2]

The measurement and monitoring of health inequalities between different groups is, therefore, of intrinsic policy interest. An indicator commonly used for measuring and monitoring health inequalities is life expectancy (LE). A limitation of life expectancy however is that it reflects only the mortality experiences of populations and does not fully take account of their health. All years lived are counted equally, no matter whether lived in full or ill-health. In contrast, health expectancies are composite measures that combine mortality and morbidity data to provide a summary index of both the quality and quantity of life. Health expectancies therefore better reflect a population's lifelong experience of health, illness and death. By definition, there are as many health expectancies as there are concepts and measures of health.

ONS calculates two measures of health expectancy: disability-free life expectancy (DFLE) and healthy life expectancy (HLE).[3] The former is considered a more objective measure of activity limitation, while the later is based on a subjective assessment of health status. The validity of subjective assessments of health was highlighted in a comprehensive review of international studies by Idler and Benyamini which showed that a simple, global question on self-rated general health was an independent predictor of subsequent mortality even when known risk factors have been taken into account.[4]

Analysis of health patterns by DFLE and HLE can substantially differ from those obtained for life expectancy. For example, an earlier report showed that although life expectancy has continued to increase, these gains in life expectancy have not been matched by gains in healthy and disability-free life expectancies.[5] Other studies have also found that health inequalities between geographical areas measured by health expectancies are much wider than for life expectancy.[6–8]

This article presents an analysis of variation in life and health expectancies combining mortality data from 1999–2003 with data on health status and socio-economic deprivation at small area (ward) level from the 2001 Census. Wards in England and Wales were divided into twentieths by increasing deprivation score such that each of the twenty categories contained approximately the same number of people (or five per cent of the population each). The use of census data enabled more robust analysis at a finer level of geographical resolution than that reported in an earlier study which used several rounds of sparser survey data to report inequalities at deprivation decile level.[6]

Data and Methods

Health status measures

For the first time, the 2001 Census included two questions on health status (see Box One) asked of all residents (including those in institutions) which has enabled the calculation of health expectancies for individual wards in England and Wales.[9] The question on self-perceived general health was identical to the existing question included in the General Household Survey (GHS) series. Respondents who reported their general health as 'good' or 'fairly good' were categorised as healthy. The second health question in the 2001 Census asked if respondents were limited in their daily activities or work because of a long-term illness, health problem or disability. Those who answered 'yes' were categorised as disabled.

Box one

Census 2001 questions on General Health and long-term Illness

General Health

Over the last 12 months would you say your health has on the whole been: Good, Fairly good or Not good?

Limiting Long-term Illness

Do you have any long-term illness, health problem or disability which limits your daily activities or the work you can do? Include problems which are due to old age. Yes/No.

Area deprivation

Carstairs deprivation scores were calculated by ONS for all 8,797 standard wards in England and Wales as at the 2001 Census.[10] They comprise an unweighted combination of four indicators of material disadvantage: household overcrowding, male unemployment, low social class and car ownership. The ward scores ranged from -5.71 to 16.50, with an average score of 0.0 for England and Wales. Because wards vary enormously in population size (mean: 5,952; median: 4,857; minimum: 995; maximum: 35,767), with larger populations in the most deprived wards, they were grouped into equal population twentieths (each with about 1.28 million males and 1.33 million females) in ascending order of deprivation.

To provide an indicator of the relative deprivation level in each twentieth group of wards, a population weighted score was calculated for each (see Table 1).

Life expectancy

Data on all-cause mortality by sex and five-year age bands (<1,0-4, 5-9... 85+) and corresponding mid-year population estimates for each ward in England and Wales were obtained for the years 1999 to 2003 and then aggregated up by deprivation twentieths (Table 1). Standard abridged life table methods were used to calculate the life expectancy for each deprivation twentieth.

Health expectancies

Two measures of health expectancies were calculated: healthy life expectancy (HLE) and disability-free life expectancy (DFLE). Both measures were calculated using the Sullivan method[11] and results are reported at birth and at age 65. For the calculation of HLE, age and sex-specific prevalence rates of self-assessed 'good' or 'fairly good' health were used to partition the number of expected years lived in each age band into those lived healthy and those lived in poor health. Similarly, DFLE was based on the age and sex specific prevalence of no limitation in daily activities. As both indicators make allowance for the age structure of populations, they can be used, for example, to make comparisons between areas or sexes.[12,13]

It is important to note that the health expectancies reported in this paper were calculated using period-specific mortality and health rates, and thus reflect the health of a population at a particular point in time. These figures, therefore, do not represent the number of years a baby born in 2001 could actually expect to live in good health or free from disability, both because the mortality and health rates are likely to change in the future and because many of those born in an area are likely to move and live in an other area for some part of their lives. In particular, the selective migration of relatively healthy people moving from deprived areas to more affluent areas (or vice versa for unhealthy people) can have a substantial impact on period health expectancies, and hence health inequalities, at small area level. However, the available evidence suggests that migration does not have substantial effect on inequalities in health expectancies.[14]

Deprivation related health inequalities

England and Wales

In this article, analysis has focused on comparing health expectancies in the least and most deprived groups of wards because this method provides a more robust measure of the distribution of health inequalities in England and Wales than comparing values for individual wards

Table 1 **Summary statistics by deprivation twentieth (age-standardised[1])**

England and Wales

Deprivation twentieth	Number of wards	Average deprivation score[2]	Age-standardised rates							
			Males				Females			
			Deaths 1999–2003 (000's)	Mortality rate (per 1,000)[3]	Poor health rate (per 100)[4]	Limiting long-term illness rate (per 100)[4]	Deaths 1999–2003 (000's)	Mortality rate (per 1,000)[3]	Poor health rate (per 100)[4]	Limiting long-term illness rate (per 100)[4]
1 Least deprived	679	–4.1	56.2	6.5	4.3	10.4	66.2	4.8	4.7	10.4
2	639	–3.4	58.2	6.7	4.8	11.3	66.5	4.8	5.2	11.2
3	651	–3.0	62.3	6.9	5.2	12.0	71.4	4.9	5.5	11.7
4	618	–2.5	61.3	7.1	5.5	12.5	70.7	5.0	5.8	12.2
5	539	–2.2	62.9	7.2	5.8	13.0	72.4	5.0	6.1	12.6
6	507	–1.8	63.5	7.3	6.1	13.3	72.7	5.0	6.4	12.9
7	483	–1.4	62.5	7.4	6.3	13.8	71.0	5.1	6.6	13.4
8	466	–0.9	65.2	7.8	6.8	14.5	75.7	5.4	7.0	14.0
9	428	–0.5	64.1	7.9	7.2	14.9	73.7	5.4	7.4	14.5
10	440	0.0	68.0	8.2	7.4	15.4	79.3	5.6	7.7	14.7
11	430	0.5	66.0	8.3	7.9	16.1	75.9	5.6	8.1	15.4
12	386	1.1	66.7	8.6	8.4	16.9	76.2	5.8	8.6	16.1
13	382	1.7	65.7	8.9	9.0	17.7	73.1	5.9	9.2	16.9
14	366	2.4	66.8	9.2	9.6	18.5	72.8	6.1	9.7	17.6
15	326	3.0	64.5	9.3	9.9	19.0	68.8	6.2	10.1	18.2
16	341	3.8	66.9	9.5	10.5	19.7	71.5	6.3	10.5	18.7
17	318	4.6	67.3	9.9	11.1	20.5	70.4	6.5	11.2	19.5
18	291	5.6	65.2	10.1	11.3	20.5	65.5	6.5	11.4	19.7
19	278	7.2	64.9	10.7	12.4	21.9	64.2	6.9	12.5	21.1
20 Most deprived	229	10.6	60.3	11.1	13.6	23.1	55.4	7.1	13.9	22.6
Difference (Most – Least)				**4.6**	**9.3**	**12.7**		**2.3**	**9.2**	**12.1**
Ratio (Most/Least)				**1.71**	**3.17**	**2.22**		**1.47**	**2.96**	**2.16**
95% CI of ratio				**(1.68–1.74)**	**(3.13–3.22)**	**(2.18–2.25)**		**(1.32–1.63)**	**(2.77–3.15)**	**(1.99–2.34)**
England and Wales	**8,797**	**0.0**	**1,278.2**	**8.3**	**7.93**	**16.0**	**1,413.5**	**5.7**	**8.2**	**15.4**

Notes:
1 Mortality and health rates were age-standardised using European standard population.
2 Population weighted average deprivation score for wards in each group (Carstairs, 2001).
3 Mortality rate for the period 1999–2003.
4 Limiting long-term illness and poor health rates from the 2001 Census.

Source: 2001 Census, Office for National Statistics; Life tables 1999–2003, Office for National Statistics

with the highest and lowest estimates. Life and health expectancies at birth and at age 65 are presented for each twentieth group. Confidence intervals at the 95 per cent level were calculated for all life and health expectancy estimates reported. Given that the estimates were based on combining five years of mortality data with data from the population census, the confidence intervals were fairly narrow (about +/-0.1 years for LE, DFLE and HLE at birth). To improve readability, the tables presented in this study do not include confidence intervals.

Survival curves for the most and least deprived group of wards from birth to age 80 were also calculated and compared (see Appendix 1). For a synthetic birth cohort of 100 individuals, the total survival curve shows how many people would survive to a certain age based on current rates of mortality at each age. The disability-free survival curve, on the other hand, illustrates how many people would be free of disability at a specific age based on age-specific prevalence rates. Unlike death, disability or poor health is not an 'absorbing' state in the sense that one can recover from a period of long-term disability or ill-health and, equally, experience multiple episodes over their lifetime.

Within Government Office Regions and Wales

At the outset, it was found that for some regions, there were none (eg. South West Region) or just a few wards in the most deprived twentieth group (eg. South East Region had three wards). It was therefore decided to conduct the within-region analysis by grouping up wards into deciles. As the original assignment of wards to the national deprivation decile groupings was retained for the within-region analysis, the number of wards and hence the populations in each decile group in the region was no longer equally distributed. To take account of differences in decile population size, the within region analysis of inequality was carried out using a linear regression model to calculate two measures: the slope index (SII) and relative index (RII) of inequality.[15, 16]

The slope index of inequality is the coefficient provided by the linear regression between life/health expectancy and the average rank of the population by increasing deprivation group within each region. The SII can be interpreted as the absolute difference in years in life and health expectancies between the least and most deprived population decile within a region. To calculate the slope index in each GOR, life and health expectancies for each deprivation decile within every region was calculated. Next, the cumulative distribution of the regional population from the most to the least deprived decile was calculated. The mid-point of the cumulative distribution for all deciles was then regressed against the corresponding life/health expectancies.

Because the SII is an absolute measure of inequality, it is sensitive to changes in the mean level of health. To get a measure independent of the mean level of health, the RII was calculated which represents the ratio of the predicted value of life/health expectancies in the most and least deprived group within a region. A larger RII between two populations may be due to a different distribution of health expectancies and deprivation scores in the populations under comparison.

Results

Deprivation-health patterns

England and Wales

Table 1 reports the age-standardised rates for mortality, poor health and limiting long-term illness by deprivation twentieth of wards in England and Wales in 2001. The overall mortality rate for males was much higher than for females (8.3 and 5.7 per 1,000 population, respectively). On the other hand, morbidity prevalence rates for males and females were more or less the same: slightly lower for males for poor health (7.9 per 100 population compared to 8.2 for females) and slightly higher for males than females for limiting long-term illness (16.0 and 15.4 per 100 population, respectively).

Analysing the rates by deprivation twentieth, there was a consistent pattern for all three measures: there was a stepwise increase in mortality, poor health and limiting long term illness rates with increasing deprivation (Table 1). For both males and females, the poor health rates for the most deprived twentieth were about three times higher and limiting long-term illness rates were about two times higher than the least deprived twentieth. The ratio between those living in the two extreme groups of wards was lower for mortality rates: the rate in the most deprived twentieth was 70 per cent higher for males and 50 per cent higher for females than in the least deprived twentieth. Thus, the gradient in health inequality by deprivation was steeper for morbidity than mortality.

In keeping with the observed results on mortality and ill-health rates, for both sexes there was an inverse relationship between deprivation and LE, DFLE and HLE at birth – with increasing deprivation of life and health expectancies gradually decline (Table 2). Although health expectancies (DFLE in particular) were lower than life expectancies, the largest gap between the least and most deprived twentieths was for DFLE with a range of 14.1 years for males and 12.8 years for females compared with, respectively, 7.6 and 4.8 years for LE and 13.4 and 11.8 years for HLE.

The difference in health expectations between males and females widened with increasing deprivation for all measures. For example, in the least deprived wards DFLE was 1.5 years higher for females but in the most deprived twentieth of wards DFLE was 2.8 years higher (Table 2). Thus the health profile of males and females diverges because of the more rapid decline in male life and health expectancies with increasing deprivation.

The inverse relationship between deprivation and LE, HLE, and DFLE was still evident at age 65 for both sexes with stepped increases in life and health expectancies from the least to the most deprived areas (Table 3). The difference between the least and most deprived twentieth was smaller at age 65 than at birth: not only in terms of the number of years – as would be expected given shorter expectancy of life at age 65 compared to birth – but also in terms of the relative proportion of life spent in poor health. For example, at birth males in the least deprived twentieth could expect to spend about 14 per cent of their life with a disability compared with 25 per cent in the most deprived twentieth, or about 1.75 times more of expected life. At age 65, however, the equivalent proportions of life with a disability for males were about 37 per cent and 48 per cent, respectively, a relative difference of 1.31 times.

Since life expectancy at birth includes the length of life spent in both optimal and sub-optimal health, it is possible to partition the expected length of life into number of years of life with and without disability or years in good and poor health. Figure 1 shows that males could expect to spend 11 out of 79 years (14 per cent) of life at birth with disability in the least deprived twentieth and 18 out of 71 years (25 per cent) of life with disability in the most deprived twentieth. On the other hand, females in the least deprived twentieth could expect to live 13 out of 82 years of life with disability (16 per cent) and 21 out of 78 years of life (27 per cent) in the most deprived twentieth.

Table 2 **Life expectancy, disability-free life expectancy and healthy life expectancy at birth: by sex and deprivation twentieth, 2001**

England and Wales

	Life expectancy		Disability-free life expectancy		Healthy life expectancy	
Deprivation twentieth	Males	Females	Males	Females	Males	Females
1 Least deprived	79.1	82.4	67.9	69.4	74.6	76.8
2	78.7	82.4	66.9	68.6	73.8	76.3
3	78.5	82.2	66.2	68.0	73.3	75.8
4	78.0	81.9	65.5	67.5	72.7	75.3
5	77.8	81.8	64.9	67.1	72.1	74.9
6	77.7	81.9	64.6	66.8	71.8	74.7
7	77.4	81.6	64.1	66.2	71.4	74.3
8	76.9	81.2	63.2	65.5	70.6	73.6
9	76.7	81.1	62.7	65.0	70.1	73.2
10	76.3	80.7	62.1	64.6	69.5	72.7
11	76.0	80.5	61.4	63.9	68.9	72.2
12	75.6	80.2	60.5	63.1	68.2	71.4
13	75.1	79.9	59.6	62.3	67.3	70.7
14	74.6	79.7	58.7	61.6	66.4	70.0
15	74.4	79.4	58.3	61.0	66.1	69.5
16	73.9	79.2	57.5	60.5	65.2	69.0
17	73.5	78.9	56.6	59.7	64.4	68.2
18	73.1	78.8	56.4	59.5	64.0	68.0
19	72.2	78.0	55.0	58.0	62.5	66.5
20 Most deprived	71.5	77.5	53.8	56.6	61.2	65.0
Difference (Least – Most)	7.6	4.8	14.1	12.8	13.4	11.8
England and Wales	75.9	80.5	61.4	63.9	68.9	72.1

Source: 2001 Census, Office for National Statistics; Life tables 1999–2003 , Office for National Statistics

Table 3 Life expectancy, disability-free life expectancy and healthy life expectancy at age 65: by sex and deprivation twentieth, 2001

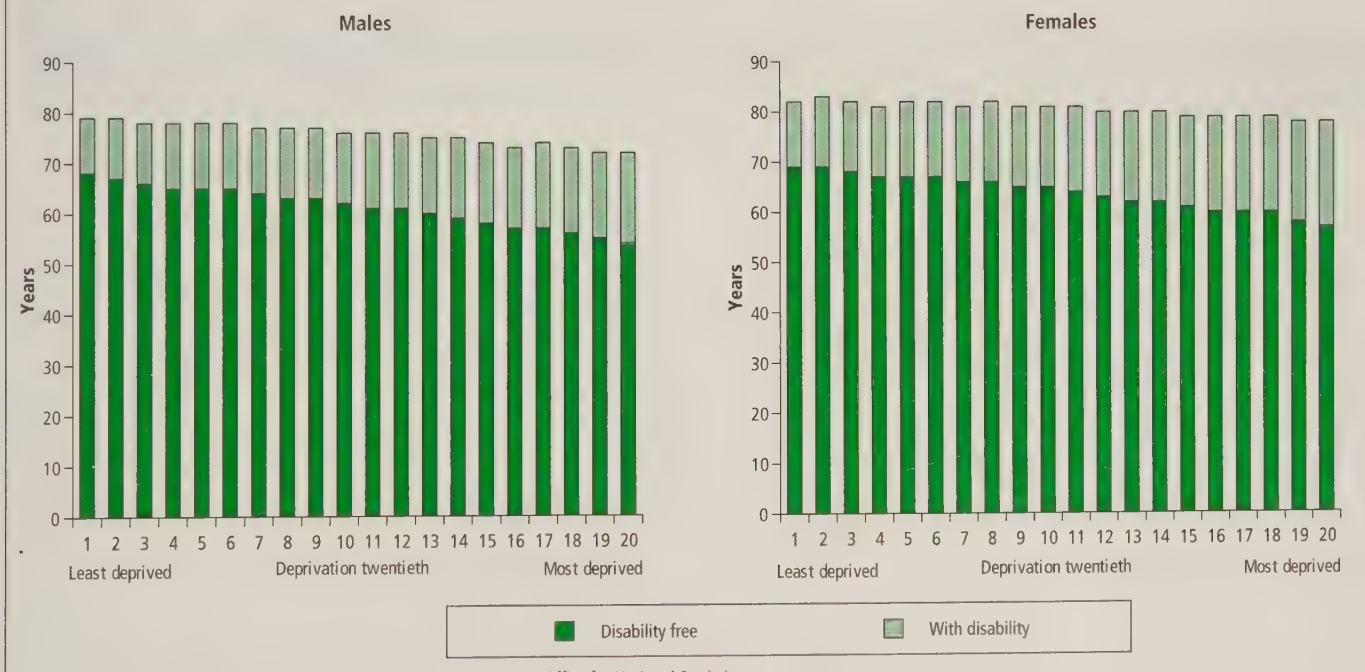
England and Wales

Deprivation twentieth	Life expectancy		Disability-free life expectancy		Healthy life expectancy	
	Males	Females	Males	Females	Males	Females
1 Least deprived	17.6	20.0	10.2	11.0	14.8	16.3
2	17.4	20.1	9.8	10.7	14.5	16.2
3	17.3	20.1	9.6	10.5	14.2	16.0
4	17.1	19.8	9.3	10.1	14.0	15.7
5	17.0	19.8	9.1	10.0	13.8	15.6
6	16.9	19.9	8.9	10.0	13.6	15.5
7	16.7	19.8	8.7	9.7	13.3	15.4
8	16.4	19.4	8.4	9.4	13.0	14.9
9	16.3	19.4	8.2	9.3	12.8	14.8
10	16.1	19.1	8.0	9.1	12.5	14.5
11	16.0	19.1	7.8	8.8	12.3	14.3
12	15.7	18.9	7.4	8.5	11.9	14.0
13	15.5	18.7	7.2	8.2	11.6	13.7
14	15.3	18.6	6.8	7.9	11.3	13.3
15	15.2	18.5	6.8	7.8	11.1	13.2
16	15.2	18.4	6.7	7.7	11.0	13.0
17	14.9	18.3	6.4	7.5	10.6	12.7
18	14.8	18.3	6.4	7.5	10.5	12.7
19	14.4	17.8	5.9	6.9	10.0	12.0
20 Most deprived	14.3	17.7	5.8	6.7	9.7	11.6
Difference (Least – Most)	3.3	2.3	4.4	4.3	5.2	4.7
England and Wales	16.1	19.1	8.0	8.9	12.4	14.4

Source: 2001 Census, Office for National Statistics; Life tables 1999–2003, Office for National Statistics

Figure 1 Expected years of life with and without disability at birth: by deprivation twentieth and sex, 2001

England and Wales



Source: 2001 Census, Office for National Statistics; Life tables 1999–2003, Office for National Statistics

The equivalent distribution of number of years spent at birth in 'good' and 'not good' health showed (figures not reported here) that the years spent in 'not good' health were fewer than the years spent with disability for all deprivation groups and for both sexes. For example, the proportion of life spent in 'not good' health was just 6 per cent for males in the least deprived twentieth (4 years out of 79 years) and 14 per cent in the most deprived twentieth (10 years out of 71 years). For females these proportions were slightly higher than for males, but still much below those for years with disability: 7 per cent (6 years out of 82 years) in 'not good' health in the least deprived twentieth and 16 per cent (13 years of 78 years) in the most deprived twentieth.

Comparison between HLE and DFLE values confirms that the size of the inequality in the length of healthy life (i.e. without disability or in perceived 'good' health) depends on the indicator of health used. Nevertheless, whichever indicator is used, females spend a greater number of years and a larger proportion of their lives in sub-optimal health than males across all deprivation groups.

To further investigate health inequalities between the most and least deprived twentieths, total survival curves and survival curves free of disability were plotted for both sexes. Figure 2 shows that the inter-twentieth difference in the proportion expected to survive (regardless of disability) increased at successive ages and reached a maximum at age 80 for both sexes. But for disability-free survival, the inter-twentieth differences increased up to about age 55 for both males and females and then declined at higher ages. Looking at the table slightly differently, of an initial synthetic cohort of 100 newborns, only 50 males and females would be free of disability by age 55 in the most deprived twentieth. In contrast, in the least deprived wards the number free of disability falls to 50 much later: by age 70 for males and 75 for females. These findings suggest that the higher mortality and morbidity rates in the most deprived areas lead to a more rapid decrease of the population free of disability at every age.

Within Government Office Regions in England and Wales

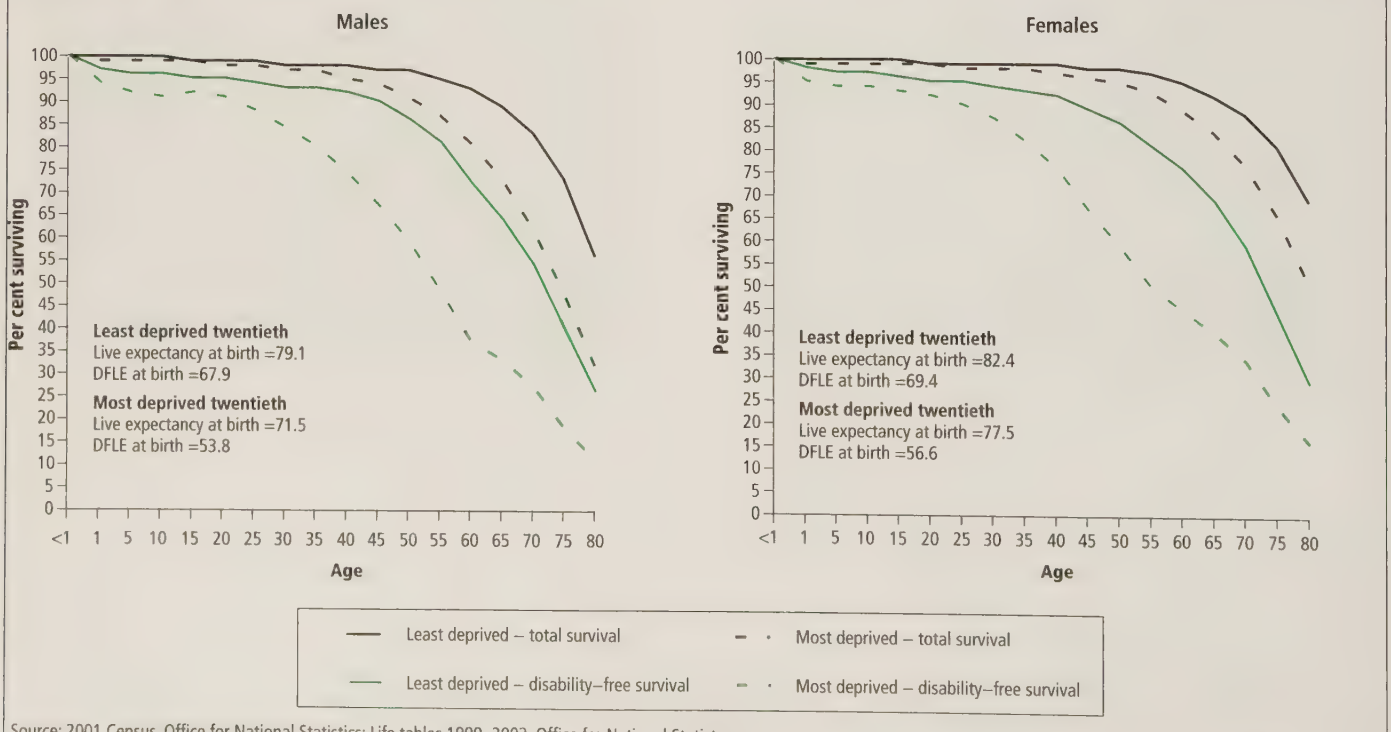
Previous reports have shown the geographical pattern of health differentials between regions and local authorities in England and Wales, with lowest life and health expectancies in the North East, North West and Wales and highest values in the East of England and the South West.[5] The aim of this study was to examine the scale of health inequalities within regions by deprivation twentieth. To do this, slope and relative indices of inequality were calculated at birth for all regions in England and in Wales.

The analysis of the SII at birth shows that the regression coefficient is negative for all regions: that is, life and health expectancies are inversely related to deprivation (Table 4). The magnitude of the SII provides the absolute difference in years between the most deprived decile and the least deprived decile wards. For example, the SII value for DFLE at birth for males in the North West was -16, while that in the East of England was -11. This indicates that the modelled difference in years between the most and least deprived deciles of wards in the two regions was five years more in the North West than in the East of England. The equivalent relative index of inequality (or RII) for DFLE at birth for males in the two regions was 1.32 and 1.19, respectively. Hence, irrespective of differences in the range of values within regions, the RII tells us that in the North West region the ratio (or the relative difference) between the DFLE in the most and least deprived deciles of wards was also 13 percentage points higher than in the East of England for males.

The magnitude of the SII was highest for DFLE, slightly lower for HLE and much lower for LE. The regions with the highest SII for DFLE were, in order, the North West, North East and Wales whilst the lowest values occurred in the East of England, the next lowest being London for males and the South West for females. The rank order of SII values were the same for DFLE and HLE and slightly different for LE. In most instances, this difference in rank order was only by one rank up or down, except for Wales whose rank position in relation to LE was consistently below that for DFLE or HLE for both sexes (Table 4).

Figure 2 **Total and disability-free survival curves for the least and most deprived twentieths: by sex, 2001**

England and Wales


Males
Females
Per cent surviving
Age
<1 1 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80
Least deprived twentieth
Live expectancy at birth =79.1
DFLE at birth =67.9
Most deprived twentieth
Live expectancy at birth =71.5
DFLE at birth =53.8
Least deprived twentieth
Live expectancy at birth =82.4
DFLE at birth =69.4
Most deprived twentieth
Live expectancy at birth =77.5
DFLE at birth =56.6
Least deprived – total survival
Most deprived – total survival
Least deprived – disability–free survival
Most deprived – disability–free survival

Source: 2001 Census, Office for National Statistics; Life tables 1999–2003, Office for National Statistics

Table 4

Slope and relative indices of inequality for life expectancy(Le), disability-free life expectancy (AFLe) and healthy life expectancy (HLE) at birth within Government Office Region and Wales, 2001

	Slope index of inequality (SII)[1]						Relative index of inequality (RII)[1]					
	Males			Females			Males			Females		
Government Office Regions	Life expectancy	Disability-free life expectancy	Healthy life expectancy	Life expectancy	Disability-free life expectancy	Healthy life expectancy	Life expectancy	Disability-free life expectancy	Healthy life expectancy	Life expectancy	Disability-free life expectancy	Healthy life expectancy
North East	–8.05	–15.62	–14.29	–5.72	–13.18	–11.94	1.11	1.32	1.24	1.07	1.24	1.19
North West	–8.77	–15.95	–15.07	–6.45	–14.17	–13.15	1.13	1.32	1.26	1.08	1.26	1.21
Yorkshire and The Humber	–7.53	–13.64	–12.91	–5.20	–11.95	–11.04	1.11	1.26	1.21	1.07	1.21	1.17
East Midlands	–6.95	–12.82	–11.79	–4.46	–10.98	–10.03	1.10	1.23	1.19	1.06	1.19	1.15
West Midlands	–7.29	–13.19	–12.68	–4.28	–12.20	–11.03	1.10	1.24	1.21	1.05	1.22	1.17
East of England	–6.54	–11.09	–10.43	–3.76	–9.38	–8.32	1.09	1.19	1.16	1.05	1.15	1.12
London	–6.62	–12.13	–11.59	–3.58	–10.93	–9.87	1.09	1.22	1.19	1.05	1.19	1.15
South East	–7.23	–12.68	–11.64	–4.26	–11.00	–9.44	1.10	1.22	1.18	1.05	1.18	1.14
South West	–7.35	–12.91	–12.11	–3.63	–9.91	–8.90	1.10	1.23	1.19	1.05	1.16	1.13
Wales	–6.89	–14.41	–13.17	–5.10	–13.05	–11.92	1.10	1.29	1.22	1.07	1.24	1.19
England and Wales	–7.51	–14.06	–13.22	–4.95	–12.49	–11.44	1.10	1.26	1.21	1.06	1.22	1.17

Note:
1 SII and RII based upon deprivation deciles.
Source: 2001 Census, Office for National Statistics; Life tables 1999–2003, Office for National Statistics

These results indicate that in absolute terms SII differences in health expectancies were greatest in the regions in the north of England and in Wales. The RII values confirm these findings as they show that in these areas the ratio between the predicted health expectancies in the lowest and highest deprivation groups was higher than elsewhere. Thus, for approximately equivalent levels of deprivation, the gap in health expectancies between the most and least deprived areas was widest in the northern regions and Wales and smallest in the East of England, London and the South West.

The reason for the deprivation gap being greater in some regions than others was that the expectation wards in the least deprived group had broadly similar levels of health expectations whichever region the ward was located in (see Table 5). In contrast, at the higher end of the deprivation scale there was more variation in health expectancy values across regions for similar levels of deprivation, with, for example, the most deprived wards in the north of the country having relatively lower health expectations than similarly classed wards in the south of the country. This finding is consistent with the observed variation in mortality rates for the most and least deprived quintile of wards between regions.[17]

Table 5

Life expectancy, disability-free life expectancy and healthy life expectancy at birth for the least deprived and the most deprived deciles within Government Office Regions and Wales: by sex, 2001

	Life expectancy		Disability-free life expectancy		Healthy life expectancy	
Government Office Region	Least deprived	Most deprived	Least deprived	Most deprived	Least deprived	Most deprived
Males						
North East	79.0	71.1	65.8	51.5	73.7	60.2
North West	78.4	70.2	66.1	51.0	73.2	59.0
Yorkshire and The Humber	78.9	71.5	67.1	54.0	73.9	61.4
East Midlands	78.8	72.1	66.7	54.9	73.7	62.6
West Midlands	78.5	72.0	66.8	54.9	73.6	62.1
East of England	79.0	71.8	67.8	56.4	74.4	63.5
London	79.4	73.2	68.1	57.1	74.7	64.0
South East	79.0	72.4	68.2	56.6	74.7	64.0
South West	79.3	70.8	67.4	52.7	74.6	60.6
Wales	78.3	71.1	64.9	49.8	72.3	58.8
Range	1.1	3.0	3.3	7.3	2.4	5.2
England and Wales	78.9	71.9	67.4	54.4	74.2	61.9
Females						
North East	82.6	76.9	68.1	55.7	76.1	64.9
North West	82.0	76.1	67.9	54.3	75.6	63.1
Yorkshire and The Humber	82.4	77.5	68.6	57.2	76.1	65.4
East Midlands	82.2	77.9	68.2	57.6	75.9	66.1
West Midlands	82.1	78.1	68.5	57.1	75.9	65.6
East of England	82.4	78.0	69.3	59.5	76.7	67.6
London	82.5	79.2	69.5	59.7	76.6	67.9
South East	82.4	78.3	69.7	59.1	77.1	67.8
South West	82.7	79.9	69.1	58.9	76.9	67.5
Wales	82.6	77.3	67.1	53.9	75.2	63.2
Range	0.7	3.8	2.6	5.8	1.9	4.8
England and Wales	82.4	77.8	69.0	57.3	76.5	65.8

Source: 2001 Census, Office for National Statistics; Life tables 1999–2003, Office for National Statistics

Comparison with other studies

A recent study[6] analysed inequalities in health expectancies in the period 1994-1999 in England using Health Survey for England (HSfE) and Carstairs deprivation scores at ward level. To compare the previous results with this study, health expectancies were restricted to wards in England. A comparison between the two studies serves as a form of independent verification of the results using different data sources as well as an exploration of the relative changes in inequality gaps, if any, between the periods 1994–1999 and 1999–2003.

It should be noted, however, that the number, population size and geographical location of individual wards in equivalent deprivation deciles in the two periods are not the same. Furthermore, the previous study did not include the population in institutions (estimated to be just under two per cent of the total population in both 1991 and 2001). Bebbington and Darton have estimated that the overall effect of institutional population adjustment for DFLE at birth was small, ranging between 0.1 to 0.4 years lower than the unadjusted estimates.[18] In terms of spread across deprivation groups, the wards in areas of low deprivation had a higher proportion of people aged 65 and over living in institutional establishments than those in the more deprived areas (author's analysis of 2001 Census data). Thus the inclusion of the institutional population is likely to bring down the estimates of health expectancies more in the least deprived wards than in the most deprived wards and, thereby, narrow the inequality gap compared with the previous study. Thus, although the comparisons presented in Table 6 should be treated with caution, given the relatively small size of the institutional population and its limited impact on health expectancies at birth, they provide a reasonable basis for comparison.

Table 6 provides a comparative assessment of the results of the two studies for LE and DFLE.[19] For both the top and bottom deprivation deciles, the expectation of life at birth increased between the two periods for all categories, except for females in the most deprived decile group where LE appears to have fallen slightly. However, the gain in life expectancy was larger for the least deprived than for the most deprived wards resulting in a slight, but consistent, increase in the LE gap in the more recent period (1999–2003).

DFLE values were relatively similar between the two studies with a uniform difference of about four years in the values for the least and most deprived decile groups for both sexes (with 2001 Census based figures higher than HSfE). While some part of this difference may be due to a real change in DFLE between the two periods, it is likely that the difference is largely due to the difference in the wording of the limitation in activities question between the two sources. The age-specific rates of prevalence of limiting long-term illness or disability derived from surveys, and particularly the HSfE, carried out in the same year as the 2001 Census are known to be higher for ages under 65, and lower for those aged 65 and over.[20] However, regardless of the differences in the absolute values of DFLE at birth in the two time periods being compared, the inter-decile difference in DFLE increased from 12.4 years to 13.0 years for males and from 10.0 years to 11.7 years for females between 1994–1999 and 1999–2003. In other words, for both measures, the gap between the least and most deprived decile showed an increase but the confidence intervals indicate that the change was not significant.

Table 6

Comparison between life expectancy and disability-free life expectancy for the least and the most deprived deciles of wards: by sex, 1994–1999[1] and 2001[2]

England

		At birth		
		Life expectancy	Disability-free life expectancy	
Sex	Period	Values	Values	95 % CI
Males	1994–1999			
	Least deprived	77.4	63.1	62.0 – 64.2
	Most deprived	71.4	50.7	49.5 – 51.8
	Difference	6.0	12.4	10.8 – 14.0
	1999–2003			
	Least deprived	78.9	67.5	67.4 – 67.5
	Most deprived	71.9	54.5	54.4 – 54.5
	Difference	7.0	13.0	12.9 – 13.1
Females	1994–1999			
	Least deprived	81.2	64.6	63.5 – 65.7
	Most deprived	78.0	54.6	53.4 – 55.8
	Difference	3.2	10.0	8.4 – 11.6
	1999–2003			
	Least deprived	82.4	69.1	69.0 – 69.1
	Most deprived	77.8	57.4	57.3 – 57.4
	Difference	4.6	11.7	11.6 – 11.8

Notes:
Life expectancy and disability-free life expectancy calculated combining:
1 6 years of mortality and health survey data for the period 1994–1999.
2 5 years of mortality data for the period 1999–2003 and the 2001 Census data.

Sources: Mortality data 1994–1999 and 1999–2003, Office for National Statistics; Health Survey for England 1994–1999, Department of Health; 2001 Census, Office for National Statistics

Discussion

The availability of population health status data at small area (ward) level from the 2001 Census has enabled a fine-grained investigation of the magnitude of the association between deprivation areas and life/health expectancies in England and Wales. The study reiterates the well established link between increasing life expectancy with decreasing deprivation: in 1999–2003, the gap in life expectancy at birth between the most and least deprived twentieths of wards is 7.6 years for males and 4.8 years for females. As in previous studies, this study has confirmed that health expectancies amplify the inequalities gap found in conventional mortality-only measures. In England and Wales in 2001, the gaps in HLE and DFLE between the two ends of the deprivation spectrum were about twice as wide as those in life expectancy (13.4 years and 11.8 years, respectively for males and 14.1 years and 12.8 years for females).

Thus, people in the most deprived twentieth of wards not only had a shorter expectation of life, they also lived more years in poor health, both in absolute and relative terms, compared with people in the least deprived areas. For example, males born in the most deprived twentieth of wards could expect to live nearly 25 per cent of their life with disability compared to 14 per cent for males in the least deprived areas. For females, the corresponding proportions of expected life with disability were 27 per cent and 16 per cent. The higher proportions of expected life with disability for females compared with males at all deprivation levels was because although women live longer than men they also have higher rates of morbidity than men.

The results of this study are broadly consistent with findings from similar area-based analyses in Canada.[21–23] Wilkins and colleagues found that neighbourhoods in the poorest income quintile in Canada had lower LE and more years of life with activity limitation.

The inverse gradient between deprivation and life/health expectancies was steeper for males than for females both at birth and age 65. For the three indicators examined, the ratios between the least and most deprived wards were higher for males than for females. Furthermore, the sex gap in all the three measures widened with increasing deprivation. Larger health gaps for males are consistent with previous research and explainable on the grounds of differences in the type of prevalent diseases between males and females, the wider distribution of men across

the occupational structure and hence exposure to hazards and women's more frequent use of healthcare.[24, 25]

Survival function plots charting the number of total survivors and that of survivors free of disability helped to identify differences in the health experience from birth onwards between the most and least deprived twentieths.These results suggest that the disability profile of middle-aged people in the most deprived wards was comparable to that of people 15 years to 25 years older living in the deprived wards. However, with cross-sectional data identifying the underlying reasons for these differences is not possible: they could suggest either an early ageing effect or a reduction in socioeconomic influences on health at older ages.

An analysis of slope and relative indices of inequality (SII and RII) showed that within regions inequalities in health expectancies at birth between the most and least deprived twentieths of wards were largest for the North West, North East and Wales both for males and females. In contrast, the smallest gap was in the East of England, South West and London. The reason for the deprivation gap being greater in some regions than others was that the wards in the least deprived group had similar levels of health expectation whichever region the ward was located in. In contrast, at the higher end of the deprivation scale there was more variation in health expectancy values across the regions for similar levels of deprivation, with for example the most deprived wards in the north of the country having relatively lower health expectation than similarly classed wards in the south of the country.

This study has not attempted to quantify the separate contribution of local area (or 'contextual') and compositional (characteristics of individuals resident in the area) effects on inequalities in health expectancies. The fact that regional and national patterns of health inequality by deprivation were broadly similar – life expectancy, DFLE and HLE decrease by increasing deprivation – suggests that deprivation rather than geographical location may be a more important contributory factor in health inequalities. But it would be of interest to analyse the separate contribution of area of residence and individual deprivation on health inequalities, particularly if there are local variations in self-reported health status and disability after controlling for risk factors such as lifestyle and socio-economic position.[26, 27] This would require the use of more advanced modelling techniques such as multi-level modelling.

This article has used an ecological or area-based index as a proxy measure of material deprivation to investigate the relationship between health inequalities and socio-economic disadvantage. But the deprivation difference in health expectancies found at the national level were of a magnitude similar to those found using alternative measures of disadvantage at the individual level, for example differences in health expectancy by social class.[28]

As with all ecological studies, it should be borne in mind that the relationships observed at the group level do not necessarily apply at the individual level. Having said that, the strength of area level analysis is that it provides a convenient measure of the combined effect of individual characteristics and environmental conditions on health outcomes. From a health policy perspective, health expectancies at area level offer a way of monitoring inequalities in the health experience of population groups. However, to gain wider acceptability as a policy tool, more research is needed to assess the validity and sensitivity of self-reported health status measures between populations, areas and over time.

Key findings

- The gaps in disability-free life expectancy and healthy life expectancy at birth between the most and least deprived twentieth groups of wards were about two times higher than the gaps in life expectancy in England and Wales in 2001.
- Total survival curves and survival curves free of disability showed that people living in the most deprived wards reach a state of poor health a decade or two earlier in their lives than their peers living in more advantaged areas. In a (synthetic) cohort of 100 babies born in 2001, only 50 were without disability by age 55 in the most deprived wards. In contrast, in the least deprived wards the numbers without disability remained much higher than this until they got to age 70 for men and 75 for women.
- Within Government Office Regions and Wales, health inequalities at birth were the widest in the North West, North East and Wales and narrowest in the East of England and the South West.
- At the most deprived end of the spectrum, wards in the regions in the north of England had lower health expectancies than similarly classed wards in the regions in the south. Least deprived wards in England and Wales tended to have similar health expectancies across all regions.

Notes and references

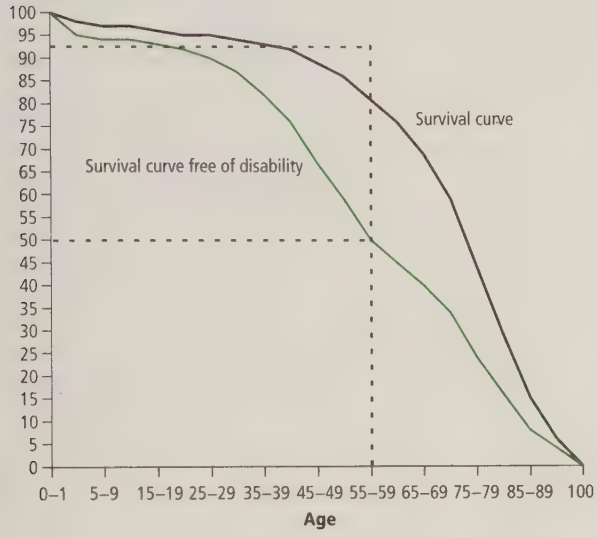
1. Donkin A, Goldblatt P and Lynch K (2002) Inequalities in life expectancy by social class, 1972–1999. *Health Statistics Quarterly* **15**, 5–15. Recently updated figures can be found on the ONS website at: www.statistics.gov.uk/downloads/theme+population/Life_Expect_Social_class_1972_01/Life_Expect_Social_Class_1972–2001.pdf.
2. Department of Health (2003) *Tackling health inequalities: A programme for action*, Department of Health: London.
3. Breakwell C and Bajekal M (2005) Review of sources and methods to monitor healthy life expectancy, *Health Statistics Quarterly* **26**, 17–22.
4. Idler E L and Benjamin Y (1997) Self-rated health and mortality, in *Journal of Health and Social Behaviour* **38**, 21–37.
5. Office for National Statistics (2006) Report: Health expectancies in the UK, 2002. *Health Statistics Quarterly* **29**, 59–62.
6. Bajekal M (2005) Healthy life expectancy by area deprivation: magnitude and trends in England, 1994-1999. *Health Statistics Quarterly* **25**, 18–27.
7. Wood R, Sutton M, Clark D, McKeon A and Bain M (2006). Measuring inequalities in health: the case for healthy life expectancy, *Journal of Epidemiology & Community Health* **60**, 1089–1092.
8. Bebbington A and Bajekal M (2003) Sub-national variation in health expectancy, in Robine J M *et al* (eds.), *Determining Health Expectancies*, John Wiley: England.
9. Census forms are often filled in by one person in the household. Therefore, responses are by proxy for some adults and certainly for children and those ill, infirm or unable to fill in the form themselves.
10. Morgan O and Baker A (2006) Measuring deprivation in England and Wales using 2001 Carstairs scores. *Health Statistics Quarterly* **31**, 28–33.
11. Sullivan D F (1971) A single index of mortality and morbidity, *HSMHA Health Reports* **86(4)**, 347–354.
12. Robine J M, Mathers C D, Bone M R and Romieu I (1993) Calculation of health expectancies: harmonization, consensus achieved and future perspectives, *6th REVES International Workshop, INSERM.*
13. Saito Y, Crimmins E M and Hayward M D (1999) Health expectancies: An overview, *NUPRI Research Paper Series*, 67.

14. Bebbington A C and Darton R A (1996) *Healthy life expectancy in England and Wales: recent evidence. Discussion paper* 1205, PSSRU (Personal Social Services Research Unit), University of Kent: Canterbury.
15. Mackenbach J P and Kunst A E (1997) Measuring the magnitude of socio-economic inequalities in health: an overview of available measures illustrated with two examples from Europe. *Social Science and Medicine* **44**, 757–771.
16. Regidor E (2004) Measures of health inequalities: Part 2. *Journal of Epidemiology & Community Health* **58**, 900–903.
17. Romeri E, Baker A and Griffiths C (2006) Mortality by deprivation and cause of death in England and Wales, 1999–2003. *Health Statistics Quarterly* **32**, 19–34 (see specially Table 5, p24).
18. Bebbington AC and Darton RA. Healthy life expectancy in England and Wales: recent evidence. Discussion paper 1205, PSSRU (Personal Social Services Research Unit), University of Kent: Canterbury.
19. The comparison between health expectancies in the two studies showed that in the previous study HLE was lower: by about 8 years for the least deprived and 13 years for the most deprived decile of wards for both sexes. This difference was because HLE based on the 2001 Census is based on collapsing a three-point scale of health status ('good', 'fairly good', 'not good') into healthy ('good' plus 'fairly good') and not healthy. HLE values derived from the HSfE on the other hand were based on a five-point scale with healthy classed as those with 'very good' or 'good' health and not healthy as those with 'fair', 'bad' or 'very bad' perceived health. The cut-off level chosen in the continuum between good and poor health to categorise responses into healthy and not healthy has a direct impact on the absolute level of HLE calculated: namely, the stricter the definition of healthy, as in the HSfE, the lower the overall value of HLE and the larger the relative inequalities between areas. See Bajekal M., Purdon S, Wood-gate Jones G and Davies S (2002) Healthy life expectancy at health authority level: comparing estimates from the General Household Survey and the Health Survey for England. *Health Statistics Quarterly* **16**, 25–37.
20. Bajekal M, Harries T, Breman R and Woodfield K (2004) *Review of Disability Estimates and Definitions*. In-house report 128, Department for Work and Pensions, London.
21. Wilkins R, Adams O, Brancker A (1989) Changes in mortality by income in Urban Canada from 1971 to 1986, *Health Reports*, **1(2)**, 137–174.
22. Wilkins R, Mayer F, Ross N, Berthelot J M (2001) Health expectancy by neighbourhood income in Canada, Conference presentation. *REVES 13*, Vancouver.
23. Pampalon R, Rochon M (2001) Health expectancy and deprivation in Quebec, 1996–98. Conference presentation. *REVES 13,* Vancouver.
24. Verbrugge L M (1984) The Twain Meet: Empirical Explanation of Sex Differences in Health and Mortality. *Journal of Health and Social Behaviour* **30**, 282–304.
25. Robine J M and Mathers C D (1993) Measuring the Compression or Expansion of Morbidity Through Changes, in Robine J M, Mathers C D, Bone M R and Romieu I M (eds.) *Health Expectancy, in Calculation of Health Expectancies: Harmonization, Consensus Achieved and Future Perspectives*, John Libbey Eurotext: Montrouge, 269–286.
26. Blaxter M (1990) *Health and Lifestyles*, Routledge: London
27. Pampalon R, Duncan C, Subramanian S V and Jones K (1999) Geographies of health perception in Québec: a multilevel perspective, *Social Science and Medicine* **48**, 1483–1490.
28. Meltzer D, McWilliams B, Brayne C, Johnson T and Bond J (2000) Socioeconomic status and the expectation of disability in old age: estimates for England, *Journal of Epidemiology & Community Health* **54**, 286–292.

Appendix 1 Survival curves

The proportion of people surviving and the proportion of people surviving without disability is easily described through the survival plot below. Starting with a synthetic cohort of 100 newborns, the proportion of people still alive decreases over time until everyone dies. In this example all members of the original cohort are assumed to die by age 100. The (total) survival curve shown in this example uses information from a period life table where the number of survivors at each age is derived from the current mortality rate observed in that age band in the population under investigation.

At any age, survivors are with or without disability: as for period life tables, current rates of disability prevalence by age group are used to derive the proportion surviving free of disability. The area between the total survival curve and the disability-free-survival curve gives the proportion of the 100 newborns who could expect to be alive with a disability at each age group. Hence, by cross-referencing the proportion of survivors on the y-axis with the corresponding age on the x-axis, the percentage still alive, with disability and free of disability at a certain age can be read-off the two curves in the plot. In the example below, of the 100 newborns in the current year, by age 55, 93 of them could expect to be alive, 43 with a disability and 50 without a disability.



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Symbols

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Notes to tables

Time series
For most tables, years start at 1971 and then continue at five-year intervals until 1991. Individual years are shown thereafter. If a year is not present the data are not available.

United Kingdom
The United Kingdom comprises England, Wales, Scotland and Northern Ireland. The Channel Islands and the Isle of Man are not part of the United Kingdom.

Population
The estimated resident population of an area includes all people who usually live there, whatever their nationality. Members of HM and US Armed Forces in England and Wales are included on residential basis wherever possible. HM Forces stationed outside England and Wales are not included. Students are taken to be resident at their term time addresses.

Further information on population estimates can be found on the National Statistics website at www.statistics.gov.uk/popest

Live births
For England and Wales, figures relate to the number of births occurring in a period; for Scotland and Northern Ireland, figures relate to births registered in a period. By law, births must be registered within 42 days in England and Wales, within 21 days in Scotland, and within 42 days in Northern Ireland. In England and Wales, where a birth is registered later than the legal time period, and too late to be included in the count for the year of occurrence, it will be included in the count for the following year.

Perinatal mortality
In October 1992 the legal definition of a stillbirth was changed, from a baby born dead after 28 completed weeks of gestation or more, to one born dead after 24 completed weeks of gestation or more.

Period expectation of life
The life tables on which these expectations are based use death rates for the given period to describe mortality levels for each year. Each individual year shown is based on a three-year period, so that for instance 1986 represents 1985–87. More details can be found at www.gad.gov.uk/life_tables/interim_life_tables.htm

Deaths
Figures for England and Wales relate to the number of deaths registered in each year up to 1992, and the number occurring in each year from 1993, though provisional figures are registrations. Figures for both Scotland and Northern Ireland relate to the number of deaths registered in each year.

Coding cause of death
Between 1 January 1984 and 31 December 1992, ONS applied its own interpretation of the International Classification of Diseases Section Rule 3 in the coding of deaths where terminal events and other 'modes of dying' such as cardiac arrest, cardiac failure, certain thrombembolic disorders, and unspecified pneumonia and bronchopneumonia, were stated by the certifier to be the underlying cause of death and other major pathology appeared on the certificate. In these cases ONS Rule 3 allowed the terminal event to be considered a direct sequel to the major pathology and that primary condition was selected as the underlying cause of death. Prior to 1984 and between 1 January 1993 and 31 December 2000, such certificates were coded to the terminal event. National Statistics also introduced automated coding of cause of death in 1993, which may also affect comparisons of deaths by cause from 1993. Further details can be found in the annual volumes Mortality statistics: Cause 1984, Series DH2 no. 11, and Mortality statistics: Cause 1993 (revised) and 1994, Series DH2 no. 21.

From 1 January 2001, under ICD-10, Rule 3 has again been changed – for details see the article in Health Statistics Quarterly no. 13. This has resulted in a fall in the death rates from respiratory diseases, notably pneumonia, and consequently slight rises in the rates for other causes eg. strokes. For details of the major changes between ICD-9 and ICD-10, see the articles in Health Statistics Quarterly 08, 13 and 14.

Age-standardised mortality rates
Directly age-standardised rates make allowances for changes in the age structure of the population. The age-standardised rate for a particular condition is that which would have occurred if the observed age-specific rates for the condition had applied in a given standard population. Tables 2.2 and 6.3 use the European Standard Population. This is a hypothetical population standard which is the same for both males and females allowing standardised rates to be compared for each sex, and between males and females.

Abortions
Figures relate to numbers occurring in a period.

Calculating quarterly rates
The denominators used for calculating quarterly rates for births, conceptions and abortions have been produced from mid-year population estimates and projections by linear interpolation.

Marriages and divorces
Marriages are tabulated according to date of solemnisation. Divorces are tabulated according to date of decree absolute. In Scotland a small number of late divorces from previous years are added to the current year. The term 'divorces' includes decrees of nullity. The fact that a marriage or divorce has taken place in England, Wales, Scotland or Northern Ireland does not necessarily mean that either of the parties is resident there.

Sources
Figures for Scotland and Northern Ireland have been provided by the General Register Office for Scotland and the Northern Ireland Statistics and Research Agency respectively.

Rounding
All figures are rounded independently; constituent parts may not add to totals. Generally numbers and rates per 1,000 population are rounded to one decimal place (eg 123.4); where appropriate, for small figures (below 10.0), two decimal places are given (eg 7.62). Figures which are provisional or estimated are given in less detail (eg 123 or 7.6 respectively) if their reliability does not justify giving the standard amount of detail. Where figures need to be treated with particular caution, an explanation is given as a footnote.

Latest figures
Figures for the latest quarters and years may be provisional and will be updated in future issues when later information becomes available. Where figures are not yet available, cells are left blank.

Table 1.1 Population and vital rates: international

Selected countries

Numbers (thousands)/Rates per thousand

Year	United Kingdom	Austria	Belgium	Cyprus[1]	Czech Republic	Denmark	Estonia	Finland	France	Germany[2]	Greece[3]	Hungary	Irish Republic
Population (thousands)													
1971	55,928	7,501	9,673	..	9,810	4,963	1,369	4,612	51,251	78,313	8,831	10,370	2,992
1976	56,216	7,566	9,818	498	10,094	5,073	1,435	4,726	52,909	78,337	9,167	10,590	3,238
1981	56,357	7,569	9,859	515	10,293	5,121	1,482	4,800	54,182	78,408	9,729	10,712	3,443
1986	56,684	7,588	9,862	545	10,340	5,120	1,534	4,918	55,547	77,720	9,967	10,631	3,543
1991	57,439	7,813	9,979	587	10,309	5,154	1,566	5,014	57,055	79,984	10,247	10,346	3,526
1996	58,164	7,959	10,157	661[12]	10,315	5,262	1,469	5,125	58,026	81,896	10,476	10,193	3,626
1997	58,314	7,968	10,181	670[12]	10,304	5,284	1,458	5,140	58,610	82,061	10,499	10,155	3,661
1998	58,475	7,977	10,203	679[12]	10,295	5,301	1,450	5,153	58,398	82,029	10,516	10,114	3,705
1999	58,684	7,992	10,226	686[12]	10,283	5,327	1,442	5,165	58,623	82,057	10,534	10,068	3,745
2000	58,886	8,012	10,251	694[12]	10,273	5,337	1,372	5,176	58,896	82,183	10,008	10,024	3,787
2001	59,113	8,043	10,287	701[12]	10,224	5,359	1,364	5,188	59,320	82,350	10,020	10,188	3,839
2002	59,322	8,084	10,333	710[12]	10,201	5,374	1,361	5,201	59,680	82,488	10,988	10,159	3,917
2003	59,554	8,118	10.376	721[12]	10,202	5,387	1,354	5,213	60,030	82,534	11,024	10,130	3,996
2004	59,834	8,175	10,421	730[12]	10,207	5,401	1,349	5,230	60,381[P]	82,501	11,062	10,117	4,044
2005	60,209	8,207[17,P]	10,446[17,P]	749[12]	10,240[17,P]	5,411[17,P]	1,350[17,P]	5,250[17,P]	62,519[17,P]	82,470[17,P]	11,083[17,P]	10,080[17,P]	4,130[17,P]
Population changes (per 1,000 per annum)													
1971–76	1.0	1.7	3.0	..	5.8	4.4	9.6	4.9	6.5	0.1	7.6	4.2	16.4
1976–81	0.5	0.1	0.8	6.8	3.9	1.9	6.6	3.1	4.8	0.2	12.3	2.3	12.7
1981–86	1.2	0.5	0.1	11.7	0.9	0.0	7.0	4.9	5.0	– 1.8	4.9	– 1.5	5.8
1986–91	2.7	5.9	2.4	15.4	– 0.6	1.3	4.2	3.9	5.4	5.8	5.6	– 5.4	– 1.0
1991–96	2.5	3.7	3.6	25.2	0.1	4.2	–12.4	3.8	3.4	4.8	4.5	– 3.0	4.3
1997–98	2.8	1.1	2.2	13.4	– 0.9	3.2	– 5.5	2.5	– 3.6	– 0.4	1.6	– 4.0	12.0
1998–99	3.6	1.9	2.3	10.3	– 1.2	4.9	– 5.5	2.3	3.9	0.3	1.7	– 4.5	10.8
1999–2000	3.4	2.5	2.4	11.7	– 1.0	1.9	–48.5	2.1	4.7	1.5	–49.9	– 4.4	11.2
2000–01	3.9	3.9	3.5	10.1	– 4.8	4.1	– 5.8	2.3	7.2	2.0	1.2	16.4	13.7
2001–02	3.5	5.1	4.5	12.8	– 2.2	2.8	– 2.9	2.5	6.1	1.7	97.6	– 2.8	20.3
2002–03	3.9	4.2	4.2	15.5	0.2	2.4	– 4.4	2.3	5.9	0.6	2.4	– 2.9	20.2
2003–04	4.7	7.0	4.3	12.5	0.4	2.6	– 3.7	3.3	5.8	– 0.4	3.4	– 1.3	12.0
2004–05	6.3	3.9	2.4	26.0	3.2	1.9	– 0.7	3.8	35.4	– 0.4	1.9	– 3.7	21.3
Live birth rate (per 1,000 population per annum)													
1971–75	14.1	13.3	13.4	17.7	17.8	14.6	15.4	13.1	16.0	10.5	15.8	16.1	22.2
1976–80	12.5	11.5	12.5	19.0	17.1	12.0	15.0	13.6	14.1	10.5	15.6	15.8	21.3
1981–85	12.9	12.0	12.0	20.2	13.5	10.2	15.6	13.4	14.2	10.7	13.3	12.3	19.2
1986–90	13.7	11.6	12.1	18.8	12.7	11.5	15.5	12.7	13.8	9.8	10.6	11.8	15.8
1991–95	13.2	11.8	12.0	16.9	11.1	13.1	10.7	12.9	12.7	10.9	9.9	11.7	14.0
1996	12.6	11.0	11.5	14.5	8.8	12.9	9.0	11.8	12.6	9.7	9.6	10.3	13.9
1997	12.5	10.4	11.4	13.9	8.8	12.8	8.7	11.5	12.4	9.9	9.7	9.9	14.4
1998	12.3	10.1	11.2	13.1	8.8	12.5	8.4	11.1	12.6	9.7	9.6	9.6	14.5
1999	11.9	9.8	11.1	12.4	8.7	12.4	8.7	11.1	12.7	9.4	11.0	9.4	14.2
2000	11.5	9.8	11.2	12.2	8.8	12.6	9.6	11.0	13.2	9.3	11.7	9.7	14.3
2001	11.3	9.4	11.1	11.6	8.9	12.2	9.3	10.8	13.0	8.9	10.2	9.5	15.1
2002	11.3	9.7	10.8	11.1	9.6	11.9	9.6	10.7	12.8	8.7	9.5	9.5	15.5
2003	11.7	9.5	10.9	11.2	9.2	12.0	9.6	10.9	12.7	8.6	9.5	9.3	15.4
2004	12.1	9.7	11.1	11.3	9.6	11.9	10.4	11.4	12.7	8.6	..	9.4	15.3
2005	12.0	9.5	..	10.9	10.0	11.9	10.7	11.0	12.7	8.3	..	9.7	14.8
Death rate (per 1,000 population per annum)													
1971–75	11.8	12.6	12.1	9.9	12.4	10.1	11.1	9.5	10.7	12.3	8.6	11.9	11.0
1976–80	11.9	12.3	11.6	10.4	12.5	10.5	12.1	9.3	10.2	12.2	8.8	12.9	10.2
1981–85	11.7	12.0	11.4	10.0	12.8	11.1	12.3	9.3	10.1	12.0	9.0	13.7	9.4
1986–90	11.4	11.1	10.8	10.2	12.4	11.5	11.9	9.8	9.5	11.6	9.3	13.5	9.1
1991–95	11.1	10.4	10.4	9.0	11.6	11.9	13.9	9.8	9.1	10.8	9.5	14.3	8.8
1996	10.9	10.0	10.3	8.5	10.9	11.6	12.9	9.6	9.2	10.8	9.6	14.0	8.7
1997	10.8	9.8	10.2	8.8	10.9	11.3	12.7	9.6	9.0	10.5	9.5	13.7	8.6
1998	10.8	9.7	10.3	8.0	10.6	11.0	13.4	9.6	9.2	10.4	9.8	13.9	8.5
1999	10.8	9.8	10.3	7.4	10.7	11.1	12.8	9.6	9.2	10.3	9.8	14.2	8.5
2000	10.3	9.6	10.2	7.7	10.6	10.9	13.4	9.5	9.1	10.2	9.6	13.5	8.2
2001	10.2	9.3	10.1	6.9	10.5	10.9	13.6	9.4	9.0	10.1	9.4	13.0	7.9
2002	10.2	9.4	10.2	7.3	10.6	10.9	13.5	9.5	9.2	10.2	9.5	13.1	7.5
2003	10.3	9.5	10.4	7.2	10.9	10.7	13.4	9.4	9.4	10.3	9.6	13.4	7.2
2004	9.7	9.1	9.8	7.1	10.5	10.3	13.2	9.1	8.4	10.0	..	13.1	7.0
2005	9.7	9.1	..	7.2	10.6	10.2	12.9	9.1	8.6	10.1	..	13.5	6.6

Note:
Estimated population (mid-year), live birth and death rates up to the latest available data, as given in the *United Nations Demographic Yearbook (2004 Edn), United Nations Monthly Bulletin of Statistics (Nov 2006)*, and the *Eurostat Yearbook 2005 (Sept 2006)*.

1 Republic of Cyprus - Greek Cypriot controlled area only
2 Including former GDR throughout.
3 Greece - Mid-year population excludes armed forces stationed outside the country but includes alien forces stationed in the area.
4 Malta - Including work and resident permit holders and foreigners residing in Malta.
5 Poland - Excluding civilian aliens within the country but including civilian nationals temporarily outside the country. Average year data for 2000 and 2001 contains revised data according to the final results of the population census 2002.
6 Portugal - including the Azores and Madeira islands.
7 Spain - Including the Balearic and Canary Islands.
8 The European Union consists of 25 member countries (EU25) - 1 May 2004 (10 new member countries).
9 Including the Indian held part of Jammu and Kashmir, the final status of which has not yet been determined.
10 Japan - Excluding diplomatic personnel outside the country and foreign military and civilian personnel and their dependants stationed in the area. Rates are based on births to or deaths of Japanese nationals only.
11 USA - Excluding armed forces overseas and civillian citizens absent from the country for extended periods.
12 Indicates population estimates of uncertain reliability.
13 Figures were updated taking into account the results of the 2002 All Russian Population Census.
14 Mid-year estimates have been adjusted for under-enumeration.
15 For statistical purposes the data for China do not include those for the Hong Kong SAR, Macao SAR and Taiwan province of China. Data for the period 1996 to 2000 have been adjusted on the basis of the Population Census of 2000. Data from 2001 to 2004 have been estimated on the basis of the annual national sample surveys of Population Changes. Estimate of uncertain reliability. Death rates for 1999–2003 and birth rates for 2000–2003 were obtained by the Sample Survey of Population Change 2003 in China.
16 Rate is for 1990–1995.
17 As at 1 January.
p provisional.

Table 1.1 continued **Population and vital rates: international**

Selected countries

Numbers (thousands)/Rates per thousand

Year	United Kingdom	Italy	Latvia	Lithuania	Luxem–bourg	Malta[4]	Nether–lands	Poland[5]	Portugal[6]	Slovakia	Slovenia	Spain[7]	Sweden	EU–25[8]
Population (thousands)														
1971	55,928	54,073	2,366	3,160	342	330	13,194	32,800	8,644	4,540	1,732	34,216	8,098	..
1976	56,216	55,718	2,465	3,315	361	330	13,774	34,360	9,356	4,764	1,809	36,118	8,222	420,258
1981	56,357	56,502	2,515	3,422	365	322	14,247	35,902	9,851	4,996	1,910	37,741	8,320	428,563
1986	56,684	56,596	2,588	3,560	368	344	14,572	37,456	10,011	5,179	1,975	38,536	8,370	433,555
1991	57,439	56,751	2,662	3,742	387	358	15,070	38,245	9,871	5,283	2,002	38,920	8,617	440,927
1996	58,164	57,380	2,457	3,615	414	380	15,531	38,618	10,058	5,374	1,991	39,426	8,838	447,405
1997	58,314	57,523	2,433	3,575	419	383	15,611	38,650	10,091	5,383	1,987	39,520	8,845	448,719
1998	58,475	57,588	2,410	3,549	425	385	15,707	38,666	10,129	5,391	1,983	39,649	8,848	449,021
1999	58,684	57,646	2,390	3,524	430	380	15,812	38,654	10,172	5,395	1,986	39,843	8,858	449,914
2000	58,886	57,762	2,373	3,500	436	390	15,926	38,256	10,226	5,401	1,990	40,169	8,872	450,202
2001	59,113	57,948	2,364	3,481	442	393	16,046	38,251	10,293	5,380	1,992	40,614	8,896	452,088
2002	59,322	57,157	2,339	3,469	446	396	16,149	38,232	10,368	5,379	1,996	41,201	8,925	453,876
2003	59,554	57,605	2,332	3,454	450	399	16,225	38,195	10,441	5,379	1,997	41,874	8,958	455,950
2004	59,834	58,180	2,313	3,436	453	401	16,282[P]	38,180	10,502	5,382[P]	1,997	42,692	8,994	442,264[P]
2005	60,209	58,640[17,P]	2,306[17,P]	3,410[17,P]	460[17,P]	403[17,P]	16,310[17,P]	38,174[17,P]	10,410[17,P]	5,390[17,P]	2,000[17,P]	43,430[17,P]	9,030[17,P]	462,107[P]
Population changes (per 1,000 per annum)														
1971–76	1.0	6.1	8.4	9.8	10.7	0.0	8.8	9.5	16.5	9.9	8.9	11.1	3.1	..
1976–81	0.5	2.8	4.1	6.5	2.5	– 4.8	6.9	9.0	10.6	9.7	11.2	9.0	2.4	4.0
1981–86	1.2	0.3	5.8	8.1	1.8	13.7	4.6	8.7	3.2	7.3	6.8	4.2	1.2	2.3
1986–91	2.7	0.5	5.7	10.2	10.2	8.1	6.8	4.2	–2.8	4.0	2.7	2.0	5.9	3.4
1991–96	2.5	2.2	–12.8	– 1.7	13.9	8.4	6.1	2.0	3.8	3.4	–1.1	2.6	5.1	2.9
1997–98	2.8	1.1	– 9.5	– 7.3	14.3	5.2	6.1	0.4	3.8	1.5	–1.0	3.3	0.3	0.7
1998–99	3.6	1.0	– 8.3	– 7.0	11.8	7.8	6.7	– 0.3	4.2	0.7	0.5	4.9	1.1	2.0
1999–2000	3.4	2.0	– 7.1	– 6.8	14.0	7.2	7.2	–10.3	5.3	1.1	2.0	8.2	1.6	0.6
2000–01	3.9	3.2	– 3.8	– 5.4	13.8	7.6	7.5	– 0.1	6.6	–3.9	1.0	11.1	2.7	4.2
2001–02	3.5	– 13.7	–10.6	– 3.4	9.0	7.6	6.4	– 0.5	7.3	–0.2	2.0	14.5	3.3	4.0
2002–03	3.9	7.8	– 3.0	– 4.3	9.0	7.6	4.7	– 1.0	7.0	0.0	0.5	16.3	3.7	4.5
2003–04	4.7	10.0	– 8.1	– 5.2	6.7	5.0	3.5	– 0.4	5.8	0.6	0.0	19.5	4.0	5.1
2004–05	6.3	7.9	– 3.0	– 7.6	15.5	5.0	1.7	– 0.2	–8.8	1.5	1.5	17.3	4.0	8.4
Live birth rate (per 1,000 population per annum)														
1971–75	14.1	16.0	14.4	16.4	11.6	17.5	14.9	17.9	20.3	19.7	16.4	19.2	13.5	..
1976–80	12.5	12.6	13.9	15.4	11.2	17.0	12.6	19.3	17.9	20.3	16.3	17.1	11.6	..
1981–85	12.9	10.6	15.2	16.0	11.6	15.3	12.2	19.0	14.5	18.0	14.2	12.8	11.3	..
1986–90	13.7	9.8	15.3	15.8	12.2	16.0	12.8	15.5	11.9	15.8	12.3	10.8	13.2	..
1991–95	13.2	9.6	10.8	13.1	13.3	14.0	12.8	12.9	11.4	13.3	10.0	9.8	13.3	..
1996	12.6	9.2	7.9	10.5	13.7	13.5	12.2	11.1	11.1	11.2	9.4	9.2	10.8	10.8
1997	12.5	9.4	7.6	10.2	13.1	13.1	12.3	10.7	11.4	11.0	9.1	9.4	10.2	10.7
1998	12.3	9.3	7.5	10.4	12.7	12.2	12.7	10.2	11.4	10.7	9.0	9.3	10.1	10.5
1999	11.9	9.1	8.1	10.3	13.0	11.3	12.7	9.9	11.4	10.4	8.8	9.5	10.0	10.5
2000	11.5	9.4	8.5	9.8	13.1	10.9	13.0	9.9	11.6	10.2	9.1	9.9	10.2	10.6
2001	11.3	9.2	8.3	9.1	12.4	9.8	12.6	9.6	11.0	9.5	8.8	10.0	10.3	10.4
2002	11.3	9.4	8.6	8.7	12.0	9.6	12.5	9.3	11.0	9.5	8.8	10.2	10.7	10.3
2003	11.7	9.4	9.0	8.9	11.8	9.8	12.3	9.2	10.8	9.6	8.7	10.5	11.1	..
2004	12.1	9.7	8.8	8.9	11.8	9.7	11.9	9.3	10.4	10.0	9.0	10.6	11.2	..
2005	12.0	9.5	9.4	..	11.8	..	11.5	9.6	10.4	9.3	9.1	10.7	11.2	..
Death rate (per 1,000 population per annum)														
1971–75	11.8	9.8	11.6	9.0	12.2	9.0	8.3	8.4	11.0	9.4	10.0	8.5	10.5	..
1976–80	11.9	9.7	12.6	10.1	11.5	9.0	8.1	9.2	10.1	9.8	9.8	8.0	10.9	..
1981–85	11.7	9.5	12.8	10.6	11.2	8.2	8.3	9.6	9.6	10.1	10.3	7.7	11.0	..
1986–90	11.4	9.4	12.4	10.3	10.5	7.4	8.5	10.0	9.6	10.1	9.6	8.2	11.1	..
1991–95	11.1	9.7	14.8	12.0	9.8	7.6	8.8	10.2	10.4	9.9	9.7	8.7	10.9	..
1996	10.9	9.6	13.8	11.6	9.4	7.4	8.9	10.0	10.8	9.8	9.4	8.9	10.6	10.1
1997	10.8	9.8	13.8	11.1	9.4	7.7	8.7	9.8	10.6	9.7	9.5	8.9	10.5	10.0
1998	10.8	10.0	14.2	11.5	9.2	8.1	8.8	9.7	10.7	9.9	9.6	9.2	10.5	10.0
1999	10.8	9.9	13.7	11.4	8.8	8.1	8.9	9.9	10.6	9.7	9.5	9.3	10.7	10.0
2000	10.3	9.7	13.6	11.1	8.6	7.7	8.8	9.6	10.3	9.8	9.3	9.0	10.5	9.8
2001	10.2	9.6	14.0	11.6	8.4	7.6	8.7	9.5	10.2	9.7	9.3	8.9	10.5	9.7
2002	10.2	9.8	13.9	11.8	8.4	7.8	8.8	9.4	10.2	9.6	9.4	8.9	10.6	9.8
2003	10.3	10.2	13.9	11.9	9.0	7.7	8.7	9.6	10.4	9.7	9.7	9.2	10.4	..
2004	9.7	9.4	13.9	12.0	7.6	7.2	8.4	9.5	9.7	9.6	9.3	8.2	10.1	..
2005	9.7	9.7	14.2	12.8	8.0	..	8.4	9.7	..	9.9	9.4	8.9	10.2	..

See notes on first page of table.

Table 1.1 continued Population and vital rates: international

Selected countries

Numbers (thousands)/Rates per thousand

Year	United Kingdom	EU–25[8]	Russian Federation	Australia	Canada	New Zealand	China	India[9]	Japan[10]	USA[11]
Population (thousands)										
1971	55,928	..	130,934	13,067	22,026	2,899	852,290 [15]	551,311	105,145	207,661
1976	56,216	420,258	135,027	14,033	23,517	3,163	937,170 [15]	617,248	113,094	218,035
1981	56,357	428,563	139,225	14,923	24,900	3,195	1,008,460 [15]	675,185	117,902	229,958
1986	56,684	433,555	144,154	16,018	26,204	3,317	1,086,733 [15]	767,199	121,672	240,680
1991	57,439	440,927	148,245	17,284	28,031	3,477	1,170,100 [15]	851,897	123,964	252,639
1996	58,164	447,405	148,160[13]	18,311[14]	29,611[14]	3,732	1,217,550 [15]	941,579 [12]	125,757	269,394
1997	58,314	448,719	147,915[13]	18,524[14]	29,907[14]	3,781	1,230,075 [15]	959,792 [12]	126,065	272,647
1998	58,475	449,021	147,671[13]	18,711[14]	30,157[14]	3,815	1,241,935 [15]	978,081 [12]	126,400	275,854
1999	58,684	449,914	147,215[13]	18,926[14]	30,493[14]	3,840	1,252,735 [15]	996,430 [12]	126,631	279,040
2000	58,886	450,202	146,597[13]	19,153[14]	30,770[14]	3,858	1,262,645 [15]	1,016,320 [12]	126,843	282,193
2001	59,113	452,088	145,976[13]	19,413[14]	31,021[14]	3,880	1,271,850 [15]	1,035,070 [12]	127,130	285,108
2002	59,322	453,876	145,306 [13]	19,641[14]	31,373[14]	3,939	1,280,400 [15]	1,050,640 [12]	127,400	287,985
2003	59,554	455,950	144,566 [13]	19,873[14]	31,660[14]	4,009	1,288,400 [15]	1,068.214 [12]	127,650	290,850
2004	59,834	442,264[P]	143,821 [13]	20,111[14]	31,974[14]	4,061	1,296,075 [15]	1,085,600 [12]	127,670	293,623
2005	60,209	462,107[P]	143,500 [13]	..	32,270[14,P]	4,100 [P]	..	1,097,000 [12]	..	296,410
Population changes (per 1,000 per annum)										
1971–76	1.0	..	6.3	14.8	13.5	18.2	19.9	23.9	15.1	10.0
1976–81	0.5	4.0	6.2	12.7	11.8	2.0	15.2	18.8	8.5	10.9
1981–86	1.2	2.3	7.1	14.7	10.5	7.6	15.5	27.3	6.4	9.3
1986–91	2.7	3.4	5.7	15.8	13.9	9.6	15.3	22.1	3.8	9.9
1991–96	2.5	2.9	–1.7	11.9	11.3	14.7	10.3	21.1	2.9	12.1
1997–98	2.8	0.7	– 3.1	10.1	8.4	9.0	8.7	19.1	2.7	11.5
1998–99	3.6	2.0	– 4.2	11.5	11.1	6.6	4.7	18.8	1.8	11.3
1999–2000	3.4	0.6	– 4.2	12.0	9.1	4.7	7.3	20.0	1.7	10.3
2000–01	3.9	4.2	– 4.2	13.6	8.2	5.7	7.3	18.4	2.3	10.3
2001–02	3.5	4.0	– 4.6	11.7	11.3	15.2	6.7	15.0	2.1	10.1
2002–03	3.9	4.5	– 5.1	11.8	9.1	17.8	6.2	16.7	2.0	9.9
2003–04	4.7	5.1	– 5.2	12.0	9.9	13.0	6.0	16.3	0.2	9.5
2004–05	6.3	8.4	– 2.2	..	9.3	9.6	..	10.5	..	9.5
Live birth rate (per 1,000 population per annum)										
1971–75	14.1	..	..	18.8	15.9	20.4	27.2	35.6	18.6	15.3
1976–80	12.5	..	..	15.7	15.5	16.8	18.6	33.4	14.9	15.2
1981–85	12.9	..	..	15.6	15.1	15.8	19.2	..	12.6	15.7
1986–90	13.7	..	..	15.1	14.8	17.1	..	..	10.6	16.0
1991–95	13.2	..	10.2	..	..	..	18.5 [16]	..	..	..
1996	12.6	10.8	8.8	13.9	12.3	15.4	9.8	27.3	9.6	14.7
1997	12.5	10.7	8.6	13.6	11.6	15.4	..	..	9.5	14.5
1998	12.3	10.5	8.7	13.3	11.3	14.5	..	26.2	9.5	14.6
1999	11.9	10.5	8.3	13.1	11.1	14.9	15.2 [15]	26.0	9.3	14.5
2000	11.5	10.6	8.6	13.0	10.7	14.7	14.0 [15]	25.8	9.4	14.7
2001	11.3	10.4	9.0	12.7	10.8	14.4	13.4 [15]	25.4	9.2	14.1
2002	11.3	10.3	9.6	12.8	10.5	13.7	12.9 [15]	25.0	9.1	13.9
2003	11.7	..	10.2	12.6	10.6	14.0	12.4 [15]	24.8	8.8	14.1
2004	12.1	..	10.5	12.7	10.5	14.3	12.3 [15]	24.1	8.7	14.0
2005	12.0	..	..	12.9	..	..	..	..	..	..
Death rate (per 1,000 population per annum)										
1971–75	11.8	..	..	8.2	7.4	8.4	7.3	15.5	6.4	9.1
1976–80	11.9	..	..	7.6	7.2	8.2	6.6	13.8	6.1	8.7
1981–85	11.7	..	..	7.3	7.0	8.1	6.7	..	6.1	8.6
1986–90	11.4	..	..	7.2	7.3	8.2	..	..	6.4	8.7
1991–95	11.1	..	13.7	..	..	..	..	..	..	..
1996	10.9	10.1	14.1	7.0	7.2	7.6	5.0	8.9	7.1	8.7
1997	10.8	10.0	13.7	7.0	7.2	7.3	..	..	7.2	8.6
1998	10.8	10.0	13.5	6.8	7.2	6.9	..	9.0	7.4	8.6
1999	10.8	10.0	14.6	6.8	7.2	7.3	..	8.7	7.8	8.8
2000	10.3	9.8	15.2	6.7	7.1	6.9	6.5 [15]	8.5	7.6	8.7
2001	10.2	9.7	15.4	6.6	7.1	7.2	6.4 [15]	8.4	7.6	8.5
2002	10.2	9.8	16.1	6.8	7.1	7.1	6.4 [15]	8.1	7.7	8.5
2003	10.3	..	16.4	6.7	7.1	7.0	6.4 [15]	8.0	8.0	8.4
2004	9.7	..	16.0	6.6	7.3	7.0	6.4 [15]	7.5	8.1	8.2
2005	9.7	..	..	6.4	..	..	..	..	..	..

See notes on first page of table.

Table 1.2 Population: national

Constituent countries of the United Kingdom

Numbers (thousands) and percentage age distribution

Mid-year	United Kingdom	Great Britain	England and Wales	England	Wales	Scotland	Northern Ireland
Estimates							
1971	55,928	54,388	49,152	46,412	2,740	5,236	1,540
1976	56,216	54,693	49,459	46,660	2,799	5,233	1,524
1981	56,357	54,815	49,634	46,821	2,813	5,180	1,543
1986	56,684	55,110	49,999	47,188	2,811	5,112	1,574
1991	57,439	55,831	50,748	47,875	2,873	5,083	1,607
1993	57,714	56,078	50,986	48,102	2,884	5,092	1,636
1994	57,862	56,218	51,116	48,229	2,887	5,102	1,644
1995	58,025	56,376	51,272	48,383	2,889	5,104	1,649
1996	58,164	56,503	51,410	48,519	2,891	5,092	1,662
1997	58,314	56,643	51,560	48,665	2,895	5,083	1,671
1998	58,475	56,797	51,720	48,821	2,900	5,077	1,678
1999	58,684	57,005	51,933	49,033	2,901	5,072	1,679
2000	58,886	57,203	52,140	49,233	2,907	5,063	1,683
2001	59,113	57,424	52,360	49,450	2,910	5,064	1,689
2002	59,322	57,625	52,570	49,647	2,923	5,055	1,697
2003	59,554	57,851	52,794	49,856	2,938	5,057	1,703
2004	59,834	58,124	53,046	50,093	2,952	5,078	1,710
2005	60,209	58,485	53,390	50,432	2,959	5,095	1,724
2005 by age group **(percentages)**							
0–4	*5.7*	*5.7*	*5.7*	*5.7*	*5.4*	*5.2*	*6.4*
5–15	*13.6*	*13.5*	*13.6*	*13.5*	*13.8*	*13.0*	*15.7*
16–44	*40.2*	*40.2*	*40.3*	*40.4*	*37.5*	*39.6*	*41.3*
45–64M/59F	*21.8*	*21.9*	*21.8*	*21.7*	*22.8*	*23.0*	*20.4*
65M/60F–74	*11.0*	*11.1*	*11.0*	*10.9*	*12.1*	*11.7*	*10.0*
75 and over	*7.6*	*7.7*	*7.7*	*7.7*	*8.4*	*7.4*	*6.3*
Projections[1]							
2006	60,533	58,800	53,691	50,714	2,977	5,108	1,733
2011	61,892	60,124	55,005	51,967	3,037	5,120	1,767
2016	63,304	61,504	56,378	53,276	3,102	5,126	1,800
2021	64,727	62,897	57,770	54,605	3,165	5,127	1,830
2021 by age groups **(percentages)**							
0–4	*5.6*	*5.6*	*5.6*	*5.6*	*5.3*	*5.0*	*5.9*
5–15	*12.0*	*12.0*	*12.1*	*12.1*	*11.8*	*11.2*	*13.0*
16–44	*36.8*	*36.8*	*36.9*	*37.1*	*34.7*	*35.0*	*37.2*
45–64[2]	*25.9*	*25.9*	*25.8*	*25.8*	*25.9*	*27.6*	*25.6*
65–74[2]	*10.2*	*10.2*	*10.1*	*10.0*	*11.6*	*11.3*	*9.5*
75 and over	*9.5*	*9.5*	*9.5*	*9.4*	*10.6*	*10.0*	*8.6*

Note: Figures may not add exactly due to rounding.

1 National projections based on mid-2004 population estimates.

2 Between 2010 and 2020, state retirement age will change from 65 years for men and 60 years for women to 65 years for both sexes.

Tel no. for all queries relating to population estimates - 01329 813318

Table 1.3 Population: subnational

Government Office Regions of England

Numbers (thousands) and percentage age distribution

Mid-year	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East	London	South East	South West
Estimates									
1971	2,679	7,108	4,902	3,652	5,146	4,454	7,529	6,830	4,112
1976	2,671	7,043	4,924	3,774	5,178	4,672	7,089	7,029	4,280
1981	2,636	6,940	4,918	3,853	5,187	4,854	6,806	7,245	4,381
1986	2,594	6,833	4,884	3,908	5,180	4,999	6,774	7,468	4,548
1991	2,587	6,843	4,936	4,011	5,230	5,121	6,829	7,629	4,688
1993	2,594	6,847	4,954	4,056	5,246	5,154	6,844	7,673	4,734
1994	2,589	6,839	4,960	4,072	5,249	5,178	6,874	7,712	4,757
1995	2,583	6,828	4,961	4,092	5,257	5,206	6,913	7,763	4,782
1996	2,576	6,810	4,961	4,108	5,263	5,233	6,974	7,800	4,793
1997	2,568	6,794	4,958	4,120	5,262	5,267	7,015	7,853	4,827
1998	2,561	6,792	4,958	4,133	5,271	5,302	7,065	7,889	4,849
1999	2,550	6,773	4,956	4,152	5,272	5,339	7,154	7,955	4,881
2000	2,543	6,774	4,959	4,168	5,270	5,375	7,237	7,991	4,917
2001	2,540	6,773	4,977	4,190	5,281	5,400	7,322	8,023	4,943
2002	2,538	6,783	4,993	4,223	5,304	5,422	7,371	8,044	4,968
2003	2,539	6,805	5,009	4,252	5,320	5,463	7,388	8,080	4,999
2004	2,545	6,827	5,039	4,280	5,334	5,491	7,429	8,110	5,038
2005	2,558	6,846	5,064	4,306	5,365	5,542	7,518	8,164	5,068
2005 by age group **(percentages)**									
0–4	*5.3*	*5.6*	*5.7*	*5.5*	*5.9*	*5.7*	*6.6*	*5.6*	*5.1*
5–15	*13.3*	*13.9*	*13.8*	*13.6*	*14.0*	*13.7*	*12.7*	*13.7*	*13.2*
16–44	*39.2*	*39.5*	*39.7*	*39.2*	*39.3*	*38.5*	*48.9*	*39.0*	*36.9*
45–64M/59F	*22.8*	*22.1*	*22.0*	*22.6*	*21.8*	*22.4*	*18.1*	*22.4*	*23.0*
65M/60F–74	*11.8*	*11.3*	*11.2*	*11.3*	*11.3*	*11.4*	*8.1*	*11.1*	*12.4*
75 and over	*7.7*	*7.5*	*7.7*	*7.8*	*7.7*	*8.1*	*5.7*	*8.2*	*9.4*
Projections[1]									
2005	2,550	6,852	5,074	4,309	5,356	5,532	7,522	8,162	5,078
2009	2,563	6,926	5,189	4,409	5,420	5,666	7,762	8,320	5,210
2014	2,581	7,028	5,332	4,531	5,504	5,830	8,049	8,518	5,373
2019	2,603	7,141	5,478	4,655	5,594	6,000	8,332	8,734	5,543
2024	2,624	7,247	5,617	4,774	5,680	6,164	8,587	8,953	5,712
2029	2,638	7,331	5,738	4,874	5,749	6,308	8,807	9,150	5,863
2029 by age group **(percentages)**									
0–4	*5.0*	*5.3*	*5.4*	*5.0*	*5.6*	*5.2*	*6.4*	*5.3*	*4.7*
5–15	*11.6*	*12.2*	*12.1*	*11.7*	*12.6*	*12.0*	*12.0*	*12.1*	*11.2*
16–44	*35.1*	*35.7*	*36.2*	*34.1*	*35.3*	*33.8*	*44.9*	*35.1*	*32.7*
45–64[2]	*24.4*	*24.5*	*24.3*	*25.0*	*24.2*	*24.9*	*23.5*	*24.7*	*25.0*
65–74[2]	*12.0*	*11.1*	*10.9*	*11.7*	*10.7*	*11.4*	*7.0*	*10.8*	*12.4*
75 and over	*11.9*	*11.2*	*11.1*	*12.4*	*11.7*	*12.7*	*6.2*	*12.0*	*14.0*

Note: Figures may not add exactly due to rounding.

1 These projections are based on the mid-2004 population estimates and are consistent with the 2004-based national projections produced by the Government Actuary's Department and presented in Table 1.2.

2 Between 2010 and 2020, state retirement age will change from 65 years for men and 60 years for women to 65 years for both sexes.

Tel no. for all queries relating to population estimates:- 01329 813318.

Table 1.4 Population: age and sex

Constituent countries of the United Kingdom

Numbers (thousands)

Mid-year	All ages	Age group														
		Under 1	1–4	5–14	15–24	25–34	35–44	45–59	60–64	65–74	75–84	85–89	90 and over	Under 16	16–64/59	65/60 and over
United Kingdom																
Persons																
1981	56,357	730	2,726	8,147	9,019	8,010	6,774	9,540	2,935	5,195	2,677	..	..	12,543	33,780	10,035
1986	56,684	748	2,886	7,143	9,200	8,007	7,711	9,212	3,069	5,020	2,971	716	..	11,645	34,725	10,313
1991	57,439	790	3,077	7,141	8,168	8,898	7,918	9,500	2,888	5,067	3,119	626	248	11,685	35,197	10,557
1996	58,164	719	3,019	7,544	7,231	9,131	7,958	10,553	2,785	5,066	3,129	711	317	12,018	35,498	10,649
1998	58,475	713	2,930	7,649	7,079	8,948	8,285	10,767	2,835	4,979	3,211	736	344	12,013	35,746	10,717
1999	58,684	704	2,896	7,684	7,090	8,795	8,474	10,887	2,877	4,948	3,230	746	354	12,011	35,928	10,745
2000	58,886	682	2,869	7,652	7,139	8,646	8,678	11,011	2,900	4,940	3,249	755	364	11,959	36,138	10,788
2001	59,113	663	2,819	7,624	7,261	8,475	8,846	11,168	2,884	4,947	3,296	753	377	11,863	36,406	10,845
2002	59,322	661	2,753	7,601	7,403	8,256	9,002	11,316	2,890	4,969	3,345	739	388	11,783	36,622	10,916
2003	59,554	679	2,703	7,542	7,575	8,070	9,108	11,424	2,943	5,005	3,401	706	399	11,712	36,828	11,014
2004	59,834	705	2,684	7,477	7,720	7,937	9,192	11,517	3,021	5,033	3,435	703	409	11,646	37,064	11,125
2005	60,209	716	2,712	7,382	7,871	7,897	9,246	11,624	3,114	5,048	3,424	756	419	11,598	37,368	11,244
Males																
1981	27,412	374	1,400	4,184	4,596	4,035	3,409	4,711	1,376	2,264	922	..	..	6,439	17,646	3,327
1986	27,542	384	1,478	3,664	4,663	4,022	3,864	4,572	1,463	2,206	1,060	166	..	5,968	18,142	3,432
1991	27,909	403	1,572	3,655	4,146	4,432	3,949	4,732	1,390	2,272	1,146	166	46	5,976	18,303	3,630
1996	28,287	369	1,547	3,857	3,652	4,540	3,954	5,244	1,360	2,311	1,187	201	65	6,148	18,375	3,764
1998	28,458	365	1,503	3,916	3,570	4,444	4,109	5,342	1,388	2,293	1,240	215	73	6,151	18,486	3,821
1999	28,578	361	1,485	3,934	3,577	4,367	4,200	5,400	1,409	2,289	1,259	221	77	6,152	18,582	3,845
2000	28,690	350	1,469	3,920	3,606	4,292	4,298	5,457	1,420	2,294	1,278	225	81	6,128	18,685	3,878
2001	28,832	338	1,445	3,906	3,672	4,215	4,382	5,534	1,412	2,308	1,308	227	85	6,077	18,827	3,928
2002	28,963	339	1,409	3,895	3,754	4,107	4,460	5,604	1,414	2,327	1,339	226	89	6,037	18,945	3,982
2003	29,108	349	1,384	3,864	3,850	4,018	4,514	5,653	1,439	2,354	1,371	219	94	6,002	19,068	4,038
2004	29,271	361	1,375	3,833	3,933	3,954	4,553	5,694	1,476	2,374	1,394	224	99	5,970	19,210	4,091
2005	29,479	367	1,389	3,785	4,018	3,933	4,579	5,746	1,519	2,389	1,403	248	103	5,946	19,390	4,143
Females																
1981	28,946	356	1,327	3,963	4,423	3,975	3,365	4,829	1,559	2,931	1,756	..	..	6,104	16,134	6,708
1986	29,142	364	1,408	3,480	4,538	3,985	3,847	4,639	1,606	2,814	1,911	550	..	5,678	16,583	6,881
1991	29,530	387	1,505	3,487	4,021	4,466	3,968	4,769	1,498	2,795	1,972	460	202	5,709	16,894	6,927
1996	29,877	350	1,472	3,687	3,579	4,591	4,005	5,309	1,426	2,755	1,942	509	252	5,870	17,123	6,885
1998	30,017	348	1,427	3,733	3,509	4,504	4,176	5,425	1,447	2,686	1,971	521	271	5,861	17,260	6,895
1999	30,106	343	1,412	3,750	3,513	4,428	4,273	5,487	1,468	2,659	1,971	525	277	5,859	17,346	6,900
2000	30,196	333	1,399	3,732	3,533	4,353	4,380	5,554	1,481	2,646	1,971	530	283	5,832	17,453	6,911
2001	30,281	324	1,375	3,718	3,589	4,260	4,465	5,634	1,473	2,640	1,987	526	292	5,786	17,579	6,917
2002	30,359	323	1,344	3,706	3,649	4,149	4,542	5,712	1,476	2,641	2,006	512	299	5,747	17,677	6,934
2003	30,446	331	1,319	3,677	3,725	4,052	4,594	5,771	1,504	2,651	2,030	486	305	5,710	17,760	6,976
2004	30,563	343	1,309	3,644	3,787	3,983	4,640	5,823	1,545	2,659	2,041	478	310	5,676	17,854	7,034
2005	30,730	349	1,323	3,597	3,853	3,964	4,667	5,878	1,595	2,659	2,022	508	316	5,652	17,978	7,100
England and Wales																
Persons																
1981	49,634	634	2,372	7,085	7,873	7,086	5,996	8,433	2,607	4,619	2,388	383	157	10,910	29,796	8,928
1986	49,999	654	2,522	6,226	8,061	7,052	6,856	8,136	2,725	4,470	2,655	461	182	10,161	30,647	9,190
1991	50,748	698	2,713	6,248	7,165	7,862	7,022	8,407	2,553	4,506	2,790	561	223	10,247	31,100	9,400
1996	51,410	637	2,668	6,636	6,336	8,076	7,017	9,363	2,457	4,496	2,801	639	285	10,584	31,353	9,474
1998	51,720	631	2,594	6,740	6,212	7,925	7,304	9,552	2,503	4,411	2,875	661	311	10,599	31,591	9,530
1999	51,933	625	2,566	6,779	6,228	7,800	7,475	9,656	2,542	4,381	2,891	671	319	10,608	31,771	9,554
2000	52,140	607	2,544	6,757	6,275	7,682	7,661	9,764	2,564	4,372	2,907	680	328	10,572	31,977	9,591
2001	52,360	589	2,502	6,740	6,387	7,536	7,816	9,898	2,549	4,377	2,947	677	340	10,495	32,226	9,639
2002	52,570	589	2,445	6,726	6,520	7,349	7,962	10,027	2,553	4,395	2,990	664	351	10,435	32,435	9,700
2003	52,794	606	2,402	6,677	6,681	7,190	8,062	10,116	2,599	4,427	3,039	634	360	10,381	32,627	9,786
2004	53,046	629	2,386	6,621	6,817	7,073	8,140	10,188	2,669	4,451	3,067	633	370	10,327	32,837	9,882
2005	53,390	639	2,413	6,537	6,959	7,039	8,195	10,272	2,757	4,463	3,056	681	379	10,287	33,114	9,989
Males																
1981	24,160	324	1,218	3,639	4,011	3,569	3,024	4,178	1,227	2,020	825	94	32	5,601	15,589	2,970
1986	24,311	335	1,299	3,194	4,083	3,542	3,438	4,053	1,302	1,972	951	115	35	5,208	16,031	3,072
1991	24,681	356	1,385	3,198	3,638	3,920	3,504	4,199	1,234	2,027	1,029	150	42	5,240	16,192	3,248
1996	25,030	327	1,368	3,393	3,202	4,020	3,489	4,659	1,205	2,059	1,067	182	59	5,416	16,247	3,367
1998	25,201	323	1,331	3,451	3,135	3,942	3,627	4,744	1,230	2,041	1,115	194	66	5,428	16,355	3,417
1999	25,323	321	1,315	3,471	3,144	3,880	3,711	4,793	1,250	2,036	1,132	200	70	5,434	16,452	3,437
2000	25,438	311	1,303	3,462	3,172	3,823	3,802	4,842	1,259	2,040	1,148	204	73	5,416	16,556	3,466
2001	25,574	301	1,281	3,453	3,231	3,758	3,881	4,907	1,252	2,052	1,175	206	77	5,376	16,688	3,510
2002	25,702	302	1,251	3,446	3,307	3,664	3,955	4,967	1,253	2,069	1,203	205	81	5,346	16,799	3,557
2003	25,841	311	1,230	3,422	3,394	3,588	4,006	5,008	1,274	2,092	1,231	199	85	5,320	16,914	3,607
2004	25,988	322	1,223	3,395	3,473	3,531	4,043	5,040	1,307	2,109	1,251	203	90	5,294	17,041	3,653
2005	26,179	327	1,236	3,352	3,553	3,511	4,070	5,082	1,347	2,122	1,259	225	94	5,275	17,205	3,699
Females																
1981	25,474	310	1,154	3,446	3,863	3,517	2,972	4,255	1,380	2,599	1,564	289	126	5,309	14,207	5,958
1986	25,687	319	1,223	3,032	3,978	3,509	3,418	4,083	1,422	2,498	1,704	346	148	4,953	14,616	6,118
1991	26,067	342	1,328	3,050	3,527	3,943	3,517	4,208	1,319	2,479	1,761	411	181	5,007	14,908	6,152
1996	26,381	310	1,300	3,243	3,134	4,056	3,528	4,704	1,252	2,437	1,734	457	227	5,168	15,106	6,107
1998	26,519	308	1,264	3,289	3,077	3,983	3,677	4,808	1,272	2,370	1,760	467	244	5,171	15,235	6,113
1999	26,610	305	1,251	3,308	3,083	3,920	3,763	4,863	1,292	2,345	1,759	472	249	5,175	15,318	6,117
2000	26,702	296	1,241	3,296	3,103	3,859	3,859	4,923	1,304	2,332	1,758	476	255	5,155	15,421	6,126
2001	26,786	288	1,220	3,287	3,156	3,778	3,935	4,992	1,297	2,326	1,771	471	263	5,119	15,538	6,129
2002	26,868	287	1,194	3,280	3,214	3,684	4,007	5,059	1,300	2,326	1,787	460	270	5,090	15,635	6,143
2003	26,953	295	1,172	3,256	3,286	3,602	4,056	5,108	1,325	2,335	1,808	436	275	5,061	15,714	6,179
2004	27,057	307	1,164	3,226	3,344	3,542	4,098	5,148	1,362	2,341	1,816	429	280	5,033	15,796	6,229
2005	27,211	312	1,177	3,185	3,406	3,528	4,124	5,190	1,410	2,342	1,798	456	285	5,013	15,909	6,290

Note: Figures may not add exactly due to rounding.

Tel no. for all enquiries relating to population estimates:- 01329 813318

Table 1.4 continued **Population: age and sex**

Constituent countries of the United Kingdom

Numbers (thousands)

Mid-year	All ages	Age group														
		Under 1	1–4	5–14	15–24	25–34	35–44	45–59	60–64	65–74	75–84	85–89	90 and over	Under 16	16–64/59	65/60 and over
England																
Persons																
1981	46,821	598	2,235	6,678	7,440	6,703	5,663	7,948	2,449	4,347	2,249	362	149	10,285	28,133	8,403
1986	47,188	618	2,380	5,869	7,623	6,682	6,478	7,672	2,559	4,199	2,501	435	172	9,583	28,962	8,643
1991	47,875	660	2,560	5,885	6,772	7,460	6,633	7,920	2,399	4,222	2,626	529	210	9,658	29,390	8,827
1996	48,519	603	2,523	6,255	5,985	7,667	6,638	8,822	2,310	4,217	2,631	602	269	9,985	29,639	8,895
1998	48,821	598	2,453	6,356	5,869	7,524	6,915	8,999	2,353	4,140	2,698	623	293	10,003	29,868	8,950
1999	49,033	592	2,427	6,394	5,881	7,412	7,079	9,097	2,391	4,114	2,713	632	301	10,014	30,044	8,975
2000	49,233	575	2,406	6,375	5,923	7,304	7,257	9,199	2,411	4,107	2,727	641	309	9,980	30,243	9,010
2001	49,450	558	2,366	6,359	6,032	7,171	7,407	9,327	2,395	4,113	2,764	638	321	9,908	30,487	9,055
2002	49,647	558	2,312	6,345	6,155	6,993	7,548	9,448	2,397	4,130	2,804	625	331	9,853	30,683	9,111
2003	49,856	575	2,273	6,300	6,304	6,843	7,643	9,533	2,438	4,159	2,852	596	340	9,804	30,862	9,190
2004	50,093	597	2,260	6,247	6,432	6,732	7,718	9,600	2,503	4,181	2,879	594	349	9,754	31,059	9,280
2005	50,432	606	2,287	6,169	6,570	6,701	7,772	9,682	2,586	4,191	2,870	640	357	9,721	31,330	9,381
Males																
1981	22,795	306	1,147	3,430	3,790	3,377	2,856	3,938	1,154	1,902	777	89	30	5,280	14,717	2,798
1986	22,949	317	1,219	3,010	3,862	3,357	3,249	3,822	1,224	1,853	897	108	33	4,911	15,147	2,891
1991	23,291	336	1,307	3,011	3,439	3,721	3,311	3,957	1,159	1,900	970	141	39	4,938	15,302	3,050
1996	23,629	309	1,294	3,198	3,023	3,818	3,302	4,390	1,133	1,932	1,003	172	55	5,110	15,358	3,161
1998	23,794	306	1,258	3,254	2,960	3,743	3,436	4,470	1,157	1,916	1,047	183	62	5,123	15,462	3,209
1999	23,916	304	1,243	3,274	2,969	3,689	3,517	4,516	1,176	1,913	1,063	188	66	5,129	15,558	3,229
2000	24,030	294	1,232	3,266	2,995	3,638	3,604	4,562	1,184	1,917	1,078	192	69	5,113	15,661	3,256
2001	24,166	285	1,212	3,257	3,053	3,580	3,681	4,624	1,176	1,928	1,103	194	73	5,075	15,793	3,298
2002	24,288	286	1,183	3,251	3,123	3,492	3,753	4,682	1,176	1,944	1,128	193	77	5,047	15,899	3,342
2003	24,415	295	1,164	3,228	3,204	3,418	3,802	4,721	1,195	1,965	1,156	187	80	5,024	16,003	3,388
2004	24,554	306	1,158	3,203	3,278	3,364	3,837	4,752	1,225	1,981	1,175	191	85	5,000	16,122	3,431
2005	24,741	311	1,171	3,164	3,355	3,346	3,866	4,792	1,263	1,992	1,182	212	89	4,984	16,283	3,474
Females																
1981	24,026	292	1,088	3,248	3,650	3,327	2,807	4,009	1,295	2,445	1,472	273	119	5,004	13,416	5,605
1986	24,239	301	1,161	2,859	3,761	3,325	3,229	3,850	1,335	2,346	1,604	326	140	4,672	13,815	5,752
1991	24,584	324	1,253	2,873	3,333	3,739	3,322	3,964	1,239	2,323	1,656	388	171	4,720	14,088	5,777
1996	24,890	293	1,229	3,056	2,961	3,849	3,336	4,432	1,177	2,286	1,628	430	214	4,876	14,281	5,734
1998	25,027	292	1,195	3,102	2,908	3,781	3,479	4,529	1,196	2,224	1,651	440	230	4,880	14,406	5,741
1999	25,117	288	1,183	3,121	2,912	3,724	3,562	4,581	1,215	2,201	1,650	444	235	4,885	14,486	5,746
2000	25,203	281	1,174	3,109	2,928	3,667	3,653	4,637	1,227	2,190	1,649	448	240	4,867	14,582	5,755
2001	25,284	273	1,154	3,102	2,979	3,591	3,726	4,702	1,219	2,185	1,661	444	248	4,834	14,694	5,757
2002	25,358	272	1,129	3,095	3,031	3,501	3,795	4,766	1,220	2,186	1,676	433	254	4,806	14,783	5,769
2003	25,441	280	1,109	3,072	3,100	3,424	3,841	4,812	1,243	2,194	1,696	409	260	4,780	14,859	5,802
2004	25,539	291	1,103	3,044	3,155	3,368	3,881	4,849	1,278	2,200	1,704	403	264	4,754	14,936	5,849
2005	25,691	296	1,116	3,005	3,215	3,356	3,907	4,890	1,322	2,200	1,688	428	269	4,737	15,048	5,906
Wales																
Persons																
1981	2,813	36	136	407	434	383	333	485	158	272	139	21	8	626	1,663	525
1986	2,811	37	143	357	438	369	378	464	166	271	154	26	10	578	1,686	547
1991	2,873	38	153	363	393	402	389	486	154	284	164	32	13	589	1,711	573
1996	2,891	34	146	381	352	409	379	541	147	279	170	37	17	598	1,714	578
1998	2,900	34	141	384	343	401	390	553	150	271	177	38	18	596	1,723	581
1999	2,901	33	139	385	347	388	395	559	151	267	178	39	18	594	1,727	580
2000	2,907	32	138	383	352	378	403	565	152	265	180	39	19	591	1,734	581
2001	2,910	32	136	382	356	365	409	572	154	264	183	39	20	587	1,739	584
2002	2,923	30	132	380	366	356	415	579	156	265	185	39	20	582	1,752	589
2003	2,938	31	129	377	377	347	418	583	161	268	187	38	20	577	1,765	596
2004	2,952	32	127	374	385	341	422	588	166	270	188	39	21	572	1,778	602
2005	2,959	32	127	368	389	338	422	590	171	272	186	42	21	567	1,783	609
Males																
1981	1,365	18	70	209	221	193	168	240	73	118	48	5	2	321	871	173
1986	1,362	19	73	184	221	186	190	231	79	119	54	7	2	297	885	181
1991	1,391	20	78	186	199	199	194	242	74	128	60	8	2	302	891	198
1996	1,401	17	74	195	179	203	187	269	72	128	64	10	3	306	890	206
1998	1,407	17	72	197	174	199	192	274	73	125	68	11	4	305	894	208
1999	1,408	17	72	198	176	192	194	277	74	124	69	11	4	305	895	208
2000	1,408	16	71	196	177	185	198	280	75	124	71	12	4	303	895	210
2001	1,409	16	69	196	179	178	200	283	75	124	73	12	4	301	895	212
2002	1,414	16	68	195	183	172	202	286	77	125	74	12	5	299	900	215
2003	1,426	16	66	194	191	170	204	287	79	127	75	12	5	297	911	219
2004	1,434	16	66	192	196	167	206	289	82	128	76	12	5	294	918	222
2005	1,438	17	65	189	199	165	205	290	84	130	77	13	5	291	922	225
Females																
1981	1,448	18	66	199	213	190	165	246	85	154	91	16	6	305	791	352
1986	1,449	18	70	173	217	184	188	233	87	152	100	20	8	282	801	366
1991	1,482	19	75	177	194	203	195	244	80	156	104	24	10	288	820	375
1996	1,490	16	71	186	173	206	192	272	75	151	106	27	13	293	825	373
1998	1,492	16	69	187	169	202	198	278	76	146	109	27	14	290	829	373
1999	1,493	16	68	187	171	196	201	282	77	144	109	27	15	289	832	371
2000	1,499	15	67	186	175	192	206	285	77	142	109	28	15	288	840	371
2001	1,502	15	66	186	177	187	209	289	78	141	110	27	15	286	844	372
2002	1,509	15	65	185	182	183	212	293	80	140	111	27	16	283	852	374
2003	1,512	15	63	184	186	178	214	296	82	141	112	26	16	281	855	377
2004	1,518	15	62	182	189	174	216	299	85	142	112	26	16	278	859	380
2005	1,521	16	61	180	190	172	217	300	88	142	110	28	16	276	861	384

See notes on first page of table.

Table 1.4 continued **Population: age and sex**

Constituent countries of the United Kingdom

Numbers (thousands)

Mid-year	All ages	Age group														
		Under 1	1–4	5–14	15–24	25–34	35–44	45–59	60–64	65–74	75–84	85–89	90 and over	Under 16	16–64/59	65/60 and over
Scotland																
Persons																
1981	5,180	69	249	780	875	724	603	880	260	460	232	35	14	1,188	3,110	882
1986	5,112	66	257	656	863	739	665	849	273	435	252	42	15	1,061	3,161	890
1991	5,083	66	258	634	746	795	696	853	265	441	259	51	19	1,021	3,151	912
1996	5,092	59	252	643	651	798	722	925	259	448	256	57	24	1,019	3,151	922
1998	5,077	58	239	644	628	766	749	941	261	445	262	59	26	1,003	3,145	929
1999	5,072	56	234	643	625	743	762	951	262	444	265	59	27	995	3,144	933
2000	5,063	53	230	636	628	717	774	962	263	445	267	59	28	985	3,141	937
2001	5,064	52	224	629	633	696	782	979	262	447	272	59	29	970	3,150	944
2002	5,055	51	217	622	639	669	788	993	262	449	276	58	30	955	3,150	950
2003	5,057	52	212	614	648	648	793	1,008	265	452	281	55	31	943	3,156	958
2004	5,078	54	210	609	653	635	796	1,025	270	455	286	54	31	935	3,175	968
2005	5,095	54	211	600	659	629	794	1,042	273	457	286	59	32	929	3,191	975
Males																
1981	2,495	35	128	400	445	364	298	424	118	194	77	8	3	610	1,603	282
1986	2,462	34	131	336	438	371	331	410	127	184	86	10	3	543	1,636	283
1991	2,445	34	132	324	377	394	345	415	124	192	91	13	3	522	1,623	299
1996	2,447	30	128	328	327	392	355	454	122	198	93	15	5	521	1,616	310
1998	2,439	30	122	329	315	374	367	463	124	198	96	16	5	513	1,610	316
1999	2,437	29	120	329	313	362	372	469	125	198	98	16	6	510	1,609	318
2000	2,432	28	118	326	315	347	377	474	125	199	100	17	6	505	1,606	322
2001	2,434	26	115	322	319	337	379	483	125	200	103	17	6	497	1,610	327
2002	2,432	26	111	319	324	325	382	490	125	202	106	17	7	489	1,612	331
2003	2,435	26	108	314	329	315	383	496	126	204	108	16	7	483	1,616	336
2004	2,446	28	107	312	332	310	384	503	129	207	111	16	7	479	1,627	341
2005	2,456	28	107	307	335	309	382	511	131	208	112	18	7	476	1,635	345
Females																
1981	2,685	33	121	380	430	359	305	456	142	265	155	27	11	579	1,506	600
1986	2,649	32	126	320	424	368	334	439	146	250	166	32	12	518	1,525	606
1991	2,639	32	126	309	369	402	351	437	141	249	168	38	16	499	1,528	612
1996	2,645	28	123	315	324	406	367	470	137	250	164	42	20	498	1,535	612
1998	2,638	28	116	315	313	392	382	478	137	248	166	43	21	490	1,535	614
1999	2,635	27	114	314	312	381	390	483	138	246	166	43	22	486	1,535	614
2000	2,631	26	112	310	313	369	397	488	138	246	166	43	22	480	1,535	616
2001	2,630	26	109	307	314	359	403	496	137	246	169	43	23	473	1,540	617
2002	2,623	25	106	303	315	344	406	504	137	247	171	41	23	466	1,538	619
2003	2,623	25	104	300	318	332	410	512	139	248	173	39	24	460	1,540	622
2004	2,632	26	103	297	321	325	412	521	141	248	175	38	24	457	1,549	627
2005	2,639	26	103	293	324	320	411	531	142	249	174	41	25	453	1,556	630
Northern Ireland																
Persons																
1981	1,543	27	106	282	271	200	175	227	68	116	57	..	..	444	874	224
1986	1,574	28	107	261	277	217	190	227	71	115	64	16	..	423	917	234
1991	1,607	26	106	260	256	240	200	241	70	121	69	14	6	417	945	246
1996	1,662	24	99	266	244	257	220	266	70	123	72	15	7	415	993	253
1998	1,678	24	97	264	239	257	231	275	71	122	74	16	7	411	1,010	257
1999	1,679	23	96	262	237	252	237	279	73	122	75	16	7	408	1,014	258
2000	1,683	22	95	259	237	247	243	284	73	123	75	16	7	403	1,020	259
2001	1,689	22	93	255	240	243	248	290	74	123	77	16	7	397	1,030	262
2002	1,697	22	91	253	243	238	251	296	75	125	79	16	7	393	1,037	266
2003	1,703	21	89	251	246	233	254	301	78	126	81	16	8	388	1,044	271
2004	1,710	22	87	248	250	229	256	305	81	127	82	16	8	383	1,052	275
2005	1,724	23	88	245	253	228	257	310	84	128	83	16	9	381	1,064	280
Males																
1981	757	14	54	145	140	102	87	109	32	50	21	..	..	228	454	75
1986	768	14	55	134	142	109	95	110	33	50	23	4	..	217	474	77
1991	783	13	54	133	131	119	100	118	32	53	26	4	1	213	487	83
1996	810	12	51	136	124	128	109	131	33	54	27	4	1	212	511	87
1998	819	12	50	135	121	128	114	135	34	54	28	5	2	211	520	89
1999	818	12	49	134	119	125	117	138	35	54	29	5	2	209	521	89
2000	820	11	49	133	120	122	119	141	35	55	29	5	2	207	524	90
2001	824	11	48	131	122	120	122	144	35	56	30	5	2	204	529	92
2002	829	11	47	130	124	117	123	147	36	56	31	5	2	202	534	94
2003	833	11	46	129	126	115	124	149	38	58	31	5	2	199	538	95
2004	836	11	45	127	128	113	125	151	39	58	32	5	2	197	542	97
2005	844	12	45	126	130	113	126	153	41	59	32	5	2	196	550	99
Females																
1981	786	13	52	137	130	98	88	118	37	66	37	..	..	216	420	150
1986	805	13	52	127	135	107	96	118	38	65	41	12	..	206	442	157
1991	824	13	52	127	125	121	100	123	38	67	44	10	4	203	458	163
1996	851	11	49	130	120	129	110	135	37	69	45	11	6	203	482	167
1998	859	12	47	129	118	129	117	139	37	68	46	11	6	201	490	168
1999	861	11	47	128	117	127	120	141	38	68	46	11	6	199	493	169
2000	862	11	46	126	118	125	124	143	38	68	46	11	6	196	497	169
2001	865	10	45	124	119	123	126	146	38	68	47	11	6	193	501	170
2002	868	11	44	123	119	120	128	149	39	68	48	11	6	191	504	173
2003	870	10	43	122	120	118	129	152	40	68	49	11	6	189	506	175
2004	874	11	42	121	122	116	130	154	42	69	50	11	6	187	509	178
2005	880	11	43	119	123	115	131	157	43	69	50	11	7	186	514	181

See notes on first page of table.

Table 1.5 Population: age, sex and legal marital status

England and Wales

Numbers (thousands)

Mid-year	Total population	Males					Females				
		Single	Married	Divorced	Widowed	Total	Single	Married	Divorced	Widowed	Total
Aged											
16 and over											
1971	36,818	4,173	12,522	187	682	17,563	3,583	12,566	296	2,810	19,255
1976	37,486	4,369	12,511	376	686	17,941	3,597	12,538	533	2,877	19,545
1981	38,724	5,013	12,238	611	698	18,559	4,114	12,284	828	2,939	20,165
1986[1]	39,837	5,625	11,867	917	695	19,103	4,617	12,000	1,165	2,953	20,734
1991	40,501	5,891	11,636	1,187	727	19,441	4,817	11,833	1,459	2,951	21,060
1996	40,827	6,225	11,310	1,346	733	19,614	5,168	11,433	1,730	2,881	21,212
1997	40,966	6,337	11,240	1,379	734	19,690	5,288	11,353	1,781	2,855	21,276
1998	41,121	6,450	11,183	1,405	735	19,773	5,406	11,284	1,827	2,832	21,349
1999	41,325	6,582	11,143	1,433	732	19,890	5,526	11,235	1,875	2,800	21,435
2000	41,569	6,721	11,113	1,456	731	20,022	5,650	11,199	1,927	2,772	21,547
2001	41,865	6,894	11,090	1,482	733	20,198	5,798	11,150	1,975	2,745	21,667
2002	42,135	7,076	11,015	1,535	731	20,357	5,961	11,073	2,035	2,709	21,778
2003	42,413	7,261	10,940	1,590	728	20,520	6,128	11,000	2,096	2,668	21,892
2004	42,719	7,461	10,863	1,644	726	20,694	6,306	10,935	2,156	2,628	22,025
2005	43,103	7,685	10,800	1,695	723	20,904	6,515	10,880	2,215	2,588	22,199
16–19											
1971	2,666	1,327	34	0	0	1,362	1,163	142	0	0	1,305
1976	2,901	1,454	28	0	0	1,482	1,289	129	0	0	1,419
1981	3,310	1,675	20	0	0	1,694	1,523	93	0	0	1,616
1986[1]	3,131	1,587	10	0	0	1,596	1,484	49	1	0	1,535
1991	2,665	1,358	8	0	0	1,366	1,267	32	0	0	1,300
1996	2,402	1,209	6	0	0	1,216	1,164	21	0	0	1,186
1997	2,478	1,246	6	0	0	1,253	1,203	20	1	1	1,225
1998	2,532	1,274	6	1	0	1,281	1,230	20	1	1	1,251
1999	2,543	1,280	6	1	1	1,288	1,234	20	1	1	1,255
2000	2,523	1,276	6	1	1	1,283	1,221	18	1	1	1,240
2001	2,567	1,304	5	1	1	1,312	1,237	16	1	1	1,255
2002	2,633	1,347	4	1	1	1,353	1,266	13	1	1	1,280
2003	2,702	1,386	4	1	1	1,391	1,299	12	0	1	1,311
2004	2,770	1,423	3	0	0	1,427	1,332	11	0	0	1,343
2005	2,807	1,441	2	0	0	1,443	1,355	9	0	0	1,364
20–24											
1971	3,773	1,211	689	3	0	1,904	745	1,113	9	2	1,869
1976	3,395	1,167	557	4	0	1,728	725	925	16	2	1,667
1981	3,744	1,420	466	10	1	1,896	1,007	811	27	2	1,847
1986[1]	4,171	1,768	317	14	0	2,099	1,383	657	32	1	2,072
1991	3,911	1,717	242	12	0	1,971	1,421	490	29	1	1,941
1996	3,291	1,538	117	3	0	1,658	1,361	260	11	1	1,633
1997	3,141	1,479	99	3	0	1,580	1,325	225	9	1	1,561
1998	3,047	1,442	86	2	0	1,530	1,306	201	8	1	1,517
1999	3,047	1,449	78	2	0	1,530	1,320	188	8	1	1,517
2000	3,088	1,470	74	3	0	1,548	1,352	180	8	1	1,540
2001	3,157	1,501	74	3	1	1,579	1,390	178	8	1	1,578
2002	3,211	1,534	69	3	1	1,607	1,428	166	8	1	1,604
2003	3,283	1,573	69	3	1	1,646	1,466	161	8	1	1,637
2004	3,358	1,621	67	3	1	1,692	1,499	156	8	2	1,665
2005	3,454	1,682	65	3	1	1,751	1,545	149	8	2	1,703
25–29											
1971	3,267	431	1,206	16	1	1,654	215	1,367	29	4	1,614
1976	3,758	533	1,326	39	2	1,900	267	1,522	65	5	1,859
1981	3,372	588	1,057	54	1	1,700	331	1,247	89	4	1,671
1986[1]	3,713	835	949	79	1	1,863	527	1,207	113	4	1,850
1991	4,154	1,132	856	82	1	2,071	800	1,158	123	2	2,083
1996	3,950	1,273	650	46	1	1,970	977	906	93	3	1,980
1997	3,877	1,294	595	42	1	1,932	1,012	844	85	3	1,945
1998	3,789	1,304	544	38	1	1,887	1,039	783	77	3	1,902
1999	3,687	1,304	497	34	1	1,836	1,051	725	72	3	1,851
2000	3,605	1,305	459	31	1	1,796	1,065	677	65	3	1,810
2001	3,487	1,293	420	28	1	1,742	1,059	625	58	3	1,745
2002	3,348	1,276	371	26	1	1,674	1,052	567	52	3	1,674
2003	3,262	1,271	337	25	1	1,634	1,053	524	49	2	1,628
2004	3,260	1,292	318	24	1	1,635	1,080	497	47	2	1,625
2005	3,327	1,335	305	23	1	1,664	1,132	483	46	2	1,663

1 The estimates by marital status for 1986 are based on the original mid-2001 population estimates, and are subject to further revision.

Table 1.5 continued **Population: age, sex and legal marital status**

England and Wales

Numbers (thousands)

Mid-year	Total population	Males					Females				
		Single	Married	Divorced	Widowed	Total	Single	Married	Divorced	Widowed	Total
30–34											
1971	2,897	206	1,244	23	3	1,475	111	1,269	34	8	1,422
1976	3,220	236	1,338	55	3	1,632	118	1,388	75	8	1,588
1981	3,715	318	1,451	97	3	1,869	165	1,544	129	9	1,846
1986[1]	3,338	355	1,197	124	2	1,679	206	1,293	154	6	1,660
1991	3,708	520	1,172	155	2	1,849	335	1,330	189	5	1,859
1996	4,126	776	1,135	138	2	2,050	551	1,316	201	7	2,076
1997	4,151	817	1,111	133	2	2,064	589	1,293	198	7	2,088
1998	4,136	848	1,078	127	3	2,056	621	1,259	193	7	2,081
1999	4,113	877	1,043	121	3	2,044	651	1,223	188	7	2,069
2000	4,076	904	1,007	114	2	2,027	679	1,182	181	7	2,049
2001	4,050	934	971	108	2	2,016	711	1,142	174	7	2,033
2002	4,000	961	921	105	2	1,990	743	1,094	167	6	2,010
2003	3,928	981	868	102	2	1,954	767	1,043	159	6	1,974
2004	3,813	987	811	97	2	1,897	777	985	149	5	1,916
2005	3,712	996	758	91	2	1,848	789	932	139	5	1,864
35–44											
1971	5,736	317	2,513	48	13	2,891	201	2,529	66	48	2,845
1976	5,608	286	2,442	104	12	2,843	167	2,427	129	42	2,765
1981	5,996	316	2,519	178	12	3,024	170	2,540	222	41	2,972
1986[1]	6,856	396	2,738	293	12	3,438	213	2,815	350	39	3,418
1991	7,022	477	2,632	384	11	3,504	280	2,760	444	34	3,517
1996	7,017	653	2,426	398	12	3,489	427	2,568	497	36	3,528
1997	7,155	708	2,433	403	12	3,556	472	2,580	511	36	3,599
1998	7,304	768	2,442	405	13	3,627	522	2,596	523	36	3,677
1999	7,475	832	2,459	408	13	3,711	577	2,617	533	37	3,763
2000	7,661	899	2,481	410	12	3,802	635	2,640	547	37	3,859
2001	7,816	963	2,494	411	12	3,881	692	2,649	558	36	3,935
2002	7,962	1,031	2,489	424	12	3,955	751	2,650	571	35	4,007
2003	8,062	1,089	2,471	435	12	4,006	805	2,634	583	34	4,056
2004	8,140	1,142	2,445	444	11	4,043	858	2,614	593	32	4,098
2005	8,195	1,195	2,415	449	11	4,070	911	2,584	597	31	4,124
45–64											
1971	11,887	502	4,995	81	173	5,751	569	4,709	125	733	6,136
1976	11,484	496	4,787	141	160	5,583	462	4,568	188	683	5,901
1981	11,040	480	4,560	218	147	5,405	386	4,358	271	620	5,635
1986[1]	10,860	461	4,422	331	141	5,355	327	4,220	388	570	5,505
1991	10,960	456	4,394	456	127	5,433	292	4,211	521	503	5,527
1996	11,820	528	4,587	628	121	5,864	318	4,466	732	440	5,956
1997	11,927	545	4,593	656	120	5,914	328	4,486	770	430	6,014
1998	12,055	565	4,608	681	121	5,974	340	4,512	807	422	6,080
1999	12,198	589	4,627	706	121	6,043	355	4,541	844	415	6,155
2000	12,328	615	4,638	727	121	6,101	372	4,564	881	410	6,227
2001	12,447	644	4,647	747	121	6,159	391	4,578	918	401	6,289
2002	12,580	671	4,649	780	120	6,220	413	4,596	960	391	6,359
2003	12,715	702	4,647	815	118	6,283	437	4,613	1,002	380	6,433
2004	12,857	736	4,644	850	117	6,347	465	4,628	1,045	371	6,510
2005	13,029	774	4,651	888	116	6,429	498	4,649	1,091	362	6,600
65 and over											
1971	6,592	179	1,840	17	492	2,527	580	1,437	32	2,016	4,065
1976	7,119	197	2,033	33	510	2,773	569	1,579	60	2,138	4,347
1981	7,548	216	2,167	54	534	2,971	533	1,692	90	2,263	4,578
1986[1]	7,768	223	2,234	76	539	3,072	477	1,759	127	2,333	4,696
1991	8,080	231	2,332	99	586	3,248	422	1,853	152	2,405	4,832
1996	8,221	247	2,390	134	597	3,367	369	1,897	196	2,393	4,854
1997	8,237	248	2,404	143	597	3,391	358	1,904	207	2,377	4,845
1998	8,258	250	2,418	152	597	3,417	348	1,913	218	2,362	4,841
1999	8,262	251	2,431	161	594	3,437	338	1,922	230	2,336	4,825
2000	8,287	252	2,449	171	593	3,466	327	1,938	243	2,313	4,821
2001	8,342	254	2,478	183	595	3,510	318	1,960	259	2,295	4,832
2002	8,400	256	2,511	197	595	3,557	308	1,987	276	2,272	4,843
2003	8,461	258	2,544	211	594	3,607	301	2,015	294	2,244	4,854
2004	8,520	259	2,575	225	593	3,653	293	2,044	314	2,216	4,867
2005	8,579	261	2,605	241	592	3,699	286	2,074	334	2,186	4,880

Table 2.1 Vital statistics summary

Constituent countries of the United Kingdom

Numbers (thousands[P]) and rates

Year and quarter	All live births		Live births outside marriage		Marriages		Divorces		Deaths		Infant mortality[5]		Neonatal mortality[6]		Perinatal mortality[7]	
	Number	Rate[1]	Number	Rate[2]	Number	Rate[3]	Number	Rate[4]	Number	Rate[1]	Number	Rate[2]	Number	Rate[2]	Number	Rate[8]
United Kingdom																
1976	675.5	12.0	61.1	90	406.0	..	135.4	..	680.8	12.1	9.79	14.5	6.68	9.9	12.25	18.0
1981	730.7	13.0	91.3	125	397.8	49.4	156.4	11.3	658.0	11.7	8.16	11.2	4.93	6.7	8.79	12.0
1986	754.8	13.3	154.3	204	393.9	..	168.2	..	660.7	11.7	7.18	9.5	4.00	5.3	7.31	9.6
1991	792.3	13.8	236.1	298	349.7	..	173.5	..	646.2	11.2	5.82	7.4	3.46	4.4	6.45	8.1
1996	733.2	12.6	260.4	355	317.5	..	171.7	..	636.0	10.9	4.50	6.1	3.00	4.1	6.41	8.7
1999	700.0	11.9	271.6	388	301.1	..	158.7	..	632.1	10.8	4.05	5.8	2.73	3.9	5.79	8.2
2000	679.0	11.5	268.1	395	305.9	..	154.6	..	608.4	10.3	3.79	5.6	2.63	3.9	5.56	8.1
2001	669.1	11.3	268.0	401	286.1	..	156.8	..	602.3	10.2	3.66	5.5	2.43	3.6	5.39	8.0
2002	668.8	11.3	271.7	406	293.0	..	160.5	..	606.2	10.2	3.50	5.2	2.36	3.5	5.57	8.3
2003	695.6	11.7	288.5	415	308.6	..	166.7	..	612.0	10.3	3.69	5.3	2.53	3.6	5.96	8.5
2004	716.0	12.0	302.6	423	313.6	..	167.1	..	583.1	9.7	3.61	5.0	2.46	3.4	6.00	8.3
2005	722.6	12.0	310.2	429	284.1[P]	..	155.1	..	582.7	9.7	3.68	5.1	2.53	3.5	5.82	8.0
2004 March	174.3	11.7	73.6	422	39.7	..	43.1	..	159.7	10.7	0.97	5.5	0.64	3.7	1.51	8.6
June	176.2	11.8	73.2	415	86.1	..	41.5	..	139.3	9.4	0.84	4.8	0.59	3.4	1.48	8.3
Sept	185.1	12.3	78.5	424	129.4	..	42.3	..	135.1	9.0	0.90	4.9	0.64	3.5	1.59	8.5
Dec	180.4	12.0	77.3	429	58.4	..	40.2	..	149.0	9.9	0.90	5.0	0.58	3.2	1.43	7.9
2005 March	173.2	11.7	74.5	430	34.9[P]	..	39.4	..	165.1	11.1	0.95	5.5	0.64	3.7	1.39	8.0
June	179.0	11.9	75.0	419	78.8[P]	..	40.0	..	141.1	9.5	0.93	5.2	0.64	3.6	1.53	8.5
Sept	190.3	12.5	82.5	434	119.9[P]	..	38.9	..	130.9	8.7	0.91	4.8	0.66	3.5	1.49	7.8
Dec	180.1	11.9	78.2	434	50.5[P]	..	36.7	..	145.5	9.7	0.90	5.0	0.59	3.3	1.42	7.8
2006 March	178.9[P]	12.0[P]	77.5[P]	433[P]	..	..	..	..	159.7[P]	10.7[P]	0.90[P]	5.1[P]	0.61[P]	3.4[P]	1.38[P]	7.7[P]
June	185.7[P]	12.3[P]	80.1[P]	431[P]	..	..	..	..	141.1[P]	9.4[P]	0.93[P]	5.0[P]	0.65[P]	3.5[P]	1.44[P]	7.7[P]
Sept	193.7[P]	12.7[P]	85.1[P]	439[P]	..	..	..	..	130.1[P]	8.5[P]	0.91[P]	4.7[P]	0.65[P]	3.4[P]	1.46[P]	7.5[P]
England and Wales																
1976	584.3	11.8	53.8	92	358.6	57.7	126.7	10.1	598.5	12.1	8.34	14.3	5.66	9.7	10.45	17.7
1981	634.5	12.8	81.0	128	352.0	49.6	145.7	11.9	577.9	11.6	7.02	11.1	4.23	6.7	7.56	11.8
1986	661.0	13.2	141.3	214	347.9	43.6	153.9	12.9	581.2	11.6	6.31	9.6	3.49	5.3	6.37	9.6
1991	699.2	13.8	211.3	302	306.8	36.0	158.7	13.5	570.0	11.2	5.16	7.4	3.05	4.4	5.65	8.0
1996	649.5	12.6	232.7	358	279.0	30.9	157.1	13.8	560.1	10.9	3.99	6.1	2.68	4.1	5.62	8.6
1999	621.9	12.0	241.9	389	263.5	27.8	144.6	12.9	556.1	10.7	3.62	5.8	2.44	3.9	5.14	8.2
2000	604.4	11.6	238.6	395	268.0	27.8	141.1	12.7	535.7	10.3	3.38	5.6	2.34	3.9	4.96	8.2
2001	594.6	11.4	238.1	400	249.2	25.4	143.8	12.9	530.4	10.1	3.24	5.4	2.14	3.6	4.76	8.0
2002	596.1	11.3	242.0	406	255.6	25.6	147.7	13.4	533.5	10.1	3.13	5.2	2.13	3.6	4.99	8.3
2003	621.5	11.8	257.2	414	270.1	26.4	153.5	14.0	538.3	10.2	3.31	5.3	2.26	3.6	5.36	8.6
2004	639.7	12.1	269.7	422	273.1	26.1	153.4	14.1	512.5	9.7	3.22	5.0	2.21	3.5	5.39	8.4
2005	645.8	12.1	276.5	428	245.1[P]	22.8[P]	141.8	13.0	512.7	9.7	3.26	5.0	2.23	3.4	5.21	8.0
2004 March	155.2	11.8	65.2	421	35.0	13.5	39.5	14.6	140.5	10.7	0.87	5.6	0.58	3.8	1.34	8.6
June	157.4	11.9	65.2	414	75.0	28.8	38.1	14.0	122.1	9.3	0.74	4.7	0.52	3.3	1.31	8.3
Sept	165.4	12.4	70.2	424	113.2	43.0	39.0	14.2	118.6	8.9	0.80	4.8	0.57	3.5	1.43	8.6
Dec	161.7	12.1	69.1	427	49.9	19.0	36.9	13.5	131.3	9.8	0.81	5.0	0.53	3.3	1.30	8.0
2005 March	154.3	11.7	66.3	430	30.1[P]	11.4[P]	36.2	13.5	145.7	11.0	0.85	5.5	0.57	3.7	1.25	8.0
June	159.8	12.0	66.6	417	68.0[P]	25.4[P]	36.5	13.4	123.8	9.4	0.82	5.2	0.56	3.5	1.35	8.4
Sept	170.2	12.6	73.7	433	104.1[P]	38.6[P]	35.6	13.0	114.7	8.6	0.79	4.6	0.57	3.4	1.34	7.8
Dec	161.7	12.0	69.9	433	42.9[P]	15.9[P]	33.4	12.2	128.5	9.6	0.80	4.9	0.52	3.2	1.28	7.9
2006 March	159.5[P]	12.0[P]	68.7[P]	431[P]	..	..	34.3[P]	12.8[P]	140.8[P]	10.6[P]	0.82[P]	5.2[P]	0.55[P]	3.5[P]	1.25[P]	7.8[P]
June	165.9[P]	12.4[P]	71.3[P]	429[P]	..	..	33.0[P]	12.2[P]	123.6[P]	9.2[P]	0.84[P]	5.1[P]	0.58[P]	3.5[P]	1.31[P]	7.9[P]
Sept	173.5[P]	12.8[P]	76.1[P]	439[P]	..	..	32.9[P]	12.0[P]	114.0[P]	8.4[P]	0.83[P]	4.8[P]	0.59[P]	3.4[P]	1.31[P]	7.5[P]
England																
1976	550.4	11.8	50.8	92	339.0	..	..	..	560.3	12.0	7.83	14.2	5.32	9.7	9.81	17.6
1981	598.2	12.8	76.9	129	332.2	..	..	..	541.0	11.6	6.50	10.9	3.93	6.6	7.04	11.7
1986	623.6	13.2	133.5	214	328.4	..	146.0	..	544.5	11.6	5.92	9.5	3.27	5.2	5.98	9.5
1991	660.8	13.7	198.9	301	290.1	..	150.1	..	534.0	11.2	4.86	7.3	2.87	4.3	5.33	8.0
1996	614.2	12.7	218.2	355	264.2	..	148.7	..	524.0	10.8	3.74	6.1	2.53	4.1	5.36	8.7
1999	589.5	12.0	226.7	385	249.5	..	137.0	..	519.6	10.8	3.38	5.7	2.29	3.9	4.86	8.2
2000	572.8	11.7	223.8	391	253.8	..	133.9	..	501.0	10.2	3.18	5.6	2.21	3.9	4.69	8.2
2001	563.7	11.4	223.3	396	236.2	..	136.4	..	496.1	10.0	3.04	5.4	2.02	3.6	4.51	8.0
2002	565.7	11.4	227.0	401	242.1	..	140.2	..	499.1	10.1	2.97	5.2	2.02	3.6	4.75	8.3
2003	589.9	11.8	241.4	409	255.6	..	145.8	..	503.4	10.1	3.14	5.3	2.15	3.7	5.09	8.6
2004	607.2	12.1	253.1	417	258.2	..	145.5	..	479.2	9.6	3.03	5.0	2.09	3.4	5.10	8.4
2005	613.0	12.2	259.4	423	231.1[P]	..	134.6	..	479.4	9.6	3.10	5.0	2.12	3.5	4.92	8.0
2004 March	147.3	11.8	61.2	416	33.3	..	37.4	..	131.4	10.6	0.82	5.5	0.55	3.7	1.26	8.5
June	149.6	12.0	61.3	410	71.0	..	36.0	..	114.2	9.2	0.69	4.6	0.49	3.3	1.25	8.3
Sept	156.9	12.5	65.8	420	106.8	..	36.9	..	110.8	8.8	0.74	4.7	0.53	3.4	1.35	8.6
Dec	153.3	12.2	64.7	422	47.2	..	35.1	..	122.9	9.8	0.78	5.1	0.52	3.4	1.24	8.1
2005 March	146.4	11.8	62.1	424	28.5[P]	..	34.4	..	136.2	10.9	0.81	5.6	0.54	3.7	1.18	8.0
June	151.8	12.1	62.5	412	64.1[P]	..	34.7	..	115.7	9.3	0.78	5.1	0.53	3.5	1.28	8.4
Sept	161.4	12.7	69.1	428	98.1[P]	..	33.8	..	107.3	8.5	0.75	4.7	0.55	3.4	1.27	7.8
Dec	153.4	12.1	65.6	428	40.4[P]	..	31.7	..	120.3	9.6	0.75	4.9	0.50	3.3	1.18	7.7
2006 March	151.3[P]	12.1[P]	64.5[P]	426[P]	..	..	32.5[P]	..	131.8[P]	10.5[P]	0.79[P]	5.2[P]	0.54[P]	3.6[P]	1.19[P]	7.8[P]
June	157.6[P]	12.5[P]	66.9[P]	425[P]	..	..	31.2[P]	..	115.7[P]	9.1[P]	0.79[P]	5.1[P]	0.55[P]	3.5[P]	1.25[P]	7.9[P]
Sept	164.7[P]	12.9[P]	71.4[P]	434[P]	..	..	31.2[P]	..	106.6[P]	8.3[P]	0.79[P]	4.8[P]	0.56[P]	3.4[P]	1.24[P]	7.5[P]

Note: Death figures for England and Wales represent the number of deaths registered in each year up to 1992, and the number of deaths occurring in each year from 1993 to 2005. Provisional death figures for 2006 relate to registrations.
Birth and death figures for England and also for Wales each exclude events for persons usually resident outside England and Wales. These events are, however, included in the totals for England and Wales combined, and for the United Kingdom.
From 1981 births to non-resident mothers in Northern Ireland are excluded from the figures for Northern Ireland, and for the United Kingdom.
Birth and death rates for 2006 are based on the 2004-based population projections for 2006.
Marriage and divorce rates in England and Wales for 1986 have been calculated using the interim revised marital status estimates (based on the original mid-2001 estimates) and are subject to further revision.
Marriage and divorce rates in England and Wales and Scotland for 2006 are based on 2005 marital status estimates.

Table 2.1 continued **Vital statistics summary**

Constituent countries of the United Kingdom

Numbers (thousands) and rates

Year and quarter	All live births		Live births outside marriage		Marriages		Divorces		Deaths		Infant mortality[5]		Neonatal mortality[6]		Perinatal mortality[7]	
	Number	Rate[1]	Number	Rate[2]	Number	Rate[3]	Number	Rate[4]	Number	Rate[1]	Number	Rate[2]	Number	Rate[2]	Number	Rate[8]
Wales																
1976	33.4	11.9	2.9	86	19.5	..	..	..	36.3	13.0	0.46	13.7	0.32	9.6	0.64	19.0
1981	35.8	12.7	4.0	112	19.8	..	..	..	35.0	12.4	0.45	12.6	0.29	8.1	0.51	14.1
1986	37.0	13.1	7.8	211	19.5	..	7.8	..	34.7	12.3	0.35	9.5	0.21	5.6	0.38	10.3
1991	38.1	13.3	12.3	323	16.6	..	8.4	..	34.1	11.9	0.25	6.6	0.16	4.1	0.30	7.9
1996	34.9	12.1	14.4	412	14.8	..	8.4	..	34.6	12.0	0.20	5.6	0.13	3.6	0.26	7.5
1999	32.1	11.1	14.8	461	14.0	..	7.5	..	35.0	12.1	0.20	6.1	0.13	4.0	0.25	7.7
2000	31.3	10.8	14.8	472	14.1	..	7.2	..	33.3	11.5	0.17	5.3	0.11	3.5	0.23	7.2
2001	30.6	10.5	14.8	483	13.0	..	7.4	..	33.0	11.3	0.16	5.4	0.11	3.5	0.23	7.5
2002	30.2	10.3	15.0	497	13.5	..	7.6	..	33.2	11.3	0.14	4.5	0.10	3.2	0.24	7.7
2003	31.4	10.7	15.8	503	14.5	..	7.7	..	33.7	11.5	0.13	4.3	0.10	3.1	0.24	7.6
2004	32.3	10.9	16.6	513	14.9	..	7.9	..	32.1	10.9	0.16	4.9	0.10	3.1	0.26	8.0
2005	32.6	11.0	17.1	524	13.9[p]	..	7.2	..	32.1	10.9	0.13	4.1	0.09	2.9	0.24	7.4
2004 March	7.8	10.6	4.0	514	1.7	..	2.0	..	8.8	12.0	0.05	5.9	0.03	3.9	0.08	9.8
June	7.8	10.6	3.9	500	4.0	..	2.0	..	7.6	10.4	0.04	4.9	0.02	3.1	0.06	7.5
Sept	8.4	11.4	4.3	512	6.4	..	2.1	..	7.5	10.1	0.04	4.9	0.03	3.7	0.07	7.8
Dec	8.3	11.2	4.4	523	2.7	..	1.8	..	8.1	11.0	0.03	3.8	0.02	1.8	0.06	6.8
2005 March	7.8	10.7	4.1	529	1.6[p]	..	1.8	..	9.3	12.6	0.03	4.2	0.02	3.1	0.06	7.7
June	7.9	10.7	4.0	510	3.9[p]	..	1.8	..	7.8	10.6	0.03	4.2	0.03	3.2	0.06	7.9
Sept	8.7	11.6	4.6	530	6.0[p]	..	1.8	..	7.1	9.6	0.03	3.3	0.02	2.8	0.06	7.0
Dec	8.2	11.0	4.3	527	2.5[p]	..	1.8	..	7.9	10.7	0.04	4.6	0.02	2.6	0.06	6.8
2006 March	8.1[p]	11.1[p]	4.2[p]	520[p]	..	..	1.8[p]	..	8.7[p]	11.8[p]	0.03[p]	3.1[p]	0.02[p]	2.0[p]	0.06[p]	6.9[p]
June	8.3[p]	11.2[p]	4.3[p]	523[p]	..	..	1.7[p]	..	7.6[p]	10.3[p]	0.03[p]	4.1[p]	0.02[p]	2.4[p]	0.05[p]	6.3[p]
Sept	8.7[p]	11.5[p]	4.7[p]	543[p]	..	..	1.7[p]	..	7.1[p]	9.5[p]	0.03[p]	3.8[p]	0.03[p]	3.0[p]	0.07[p]	7.5[p]
Scotland																
1976	64.9	12.5	6.0	93	37.5	53.8	8.1	6.5	65.3	12.5	0.96	14.8	0.67	10.3	1.20	18.3
1981	69.1	13.4	8.5	122	36.2	47.5	9.9	8.0	63.8	12.3	0.78	11.3	0.47	6.9	0.81	11.6
1986	65.8	12.9	13.6	206	35.8	42.9	12.8	10.7	63.5	12.4	0.58	8.8	0.34	5.2	0.67	10.2
1991	67.0	13.2	19.5	291	33.8	39.0	12.4	10.6	61.0	12.0	0.47	7.1	0.29	4.6	0.58	8.6
1996	59.3	11.6	21.4	360	30.2	33.2	12.3	10.9	60.7	11.9	0.37	6.2	0.23	3.9	0.55	9.2
1999	55.1	10.9	22.7	412	29.9	31.5	11.9	10.9	60.3	11.9	0.28	5.0	0.18	3.3	0.42	7.6
2000	53.1	10.5	22.6	426	30.4	31.6	11.1	10.3	57.8	11.4	0.31	5.7	0.21	4.0	0.45	8.4
2001	52.5	10.4	22.8	433	29.6	31.0	10.6	9.7	57.4	11.3	0.29	5.5	0.20	3.8	0.45	8.5
2002	51.3	10.1	22.5	440	29.8	30.8	10.8	10.0	58.1	11.5	0.27	5.3	0.16	3.2	0.39	7.6
2003	52.4	10.4	23.9	455	30.8	31.3	10.1	10.2	58.5	11.6	0.27	5.1	0.18	3.4	0.42	8.0
2004	54.0	10.6	25.2	467	32.2	32.2	11.2	10.5	56.2	11.1	0.27	4.9	0.17	3.1	0.44	8.1
2005	54.4	10.7	25.6	471	30.9	30.3	10.9	10.3	55.7	11.0	0.28	5.2	0.19	3.5	0.42	7.7
2004 March	13.5	10.7	6.4	472	3.9	15.6	2.9	10.9	15.3	12.2	0.06	4.6	0.04	2.7	0.13	9.2
June	13.3	10.5	6.1	459	8.7	35.1	2.8	10.5	13.6	10.7	0.07	5.1	0.05	3.6	0.11	8.4
Sept	13.8	10.8	6.4	462	12.7	50.6	2.7	10.2	13.1	10.2	0.07	5.3	0.05	3.4	0.11	7.8
Dec	13.3	10.4	6.3	475	6.8	27.3	2.8	10.4	14.2	11.1	0.06	4.7	0.03	2.6	0.09	6.9
2005 March	13.4	10.6	6.2	464	3.8	15.3	2.6	10.0	15.6	12.4	0.07	5.0	0.04	3.3	0.09	7.0
June	13.6	10.7	6.4	472	8.6	34.0	2.8	10.7	13.7	10.8	0.07	5.1	0.05	3.4	0.13	9.2
Sept	14.2	11.1	6.7	471	12.3	48.0	2.7	10.1	12.8	10.0	0.08	5.6	0.06	3.9	0.11	7.6
Dec	13.2	10.3	6.3	477	6.1	23.7	2.8	10.3	13.6	10.7	0.07	5.2	0.05	3.4	0.10	7.1
2006 March	13.6[p]	10.8[p]	6.6[p]	487[p]	3.5[p]	13.9[p]	2.6[p]	10.0[p]	14.9[p]	11.8[p]	0.05[p]	3.7[p]	0.03[p]	2.4[p]	0.09[p]	6.8[p]
June	14.0[p]	11.0[p]	6.7[p]	475[p]	8.3[p]	32.8[p]	3.1[p]	11.5[p]	13.9[p]	10.9[p]	0.07[p]	5.0[p]	0.05[p]	3.3[p]	0.09[p]	6.4[p]
Sept	14.2[p]	11.0[p]	6.7[p]	471[p]	12.2[p]	47.4[p]	3.5[p]	13.2[p]	12.7[p]	9.8[p]	0.05[p]	3.8[p]	0.04[p]	2.9[p]	0.11[p]	7.7[p]
Northern Ireland[9]																
1976	26.4	17.3	1.3	50	9.9	..	0.6	..	17.0	11.2	0.48	18.3	0.35	13.3	0.59	22.3
1981	27.2	17.6	1.9	70	9.6	45.4	1.4	4.2	16.3	10.6	0.36	13.2	0.23	8.3	0.42	15.3
1986	28.0	17.8	3.6	128	10.2	..	1.5	..	16.1	10.3	0.36	13.2	0.23	8.3	0.42	15.3
1991	26.0	16.2	5.3	203	9.2	..	2.3	..	15.1	9.4	0.19	7.4	0.12	4.6	0.22	8.4
1996	24.4	14.7	6.3	260	8.3	..	2.3	..	15.2	9.2	0.14	5.8	0.09	3.7	0.23	9.4
1999	23.0	13.7	7.0	303	7.6	..	2.3	..	15.7	9.3	0.15	6.4	0.11	4.8	0.23	10.0
2000	21.5	12.8	6.8	318	7.6	..	2.4	..	14.9	8.9	0.11	5.1	0.08	3.8	0.15	7.3
2001	22.0	13.0	7.1	325	7.3	..	2.4	..	14.5	8.6	0.13	6.1	0.10	4.5	0.19	8.5
2002	21.4	12.6	7.2	335	7.6	..	2.2	..	14.6	8.6	0.10	4.7	0.07	3.5	0.19	8.9
2003	21.6	12.7	7.4	344	7.8	..	2.3	..	14.5	8.5	0.11	5.3	0.09	4.0	0.18	8.1
2004	22.3	13.0	7.7	345	8.3	..	2.5	..	14.4	8.4	0.12	5.5	0.08	3.7	0.18	8.2
2005	22.3	13.0	8.1	363	8.1	..	2.4	..	14.2	8.3	0.14	6.3	0.11	5.1	0.18	8.1
2004 March	5.7	13.3	2.0	352	0.8	..	0.8	..	3.9	9.1	0.03	5.5	0.02	3.5	0.05	7.9
June	5.4	12.7	1.8	337	2.4	..	0.7	..	3.6	8.4	0.03	5.9	0.02	4.4	0.05	9.5
Sept	5.8	13.5	2.0	339	3.5	..	0.5	..	3.4	8.0	0.04	6.0	0.02	4.1	0.05	8.3
Dec	5.4	12.7	1.9	353	1.6	..	0.5	..	3.5	8.1	0.02	4.4	0.02	2.8	0.04	7.0
2005 March	5.5	13.0	2.0	363	0.9	..	0.6	..	3.8	8.9	0.03	5.2	0.02	4.3	0.05	8.8
June	5.7	13.3	2.0	359	2.2	..	0.7	..	3.7	8.6	0.04	7.2	0.03	5.6	0.04	8.4
Sept	5.9	13.7	2.0	358	3.5	..	0.5	..	3.4	7.8	0.04	6.6	0.03	5.6	0.04	7.2
Dec	5.2	11.9	1.9	373	1.4	..	0.5	..	3.4	7.9	0.03	6.0	0.02	4.6	0.04	7.9
2006 March	5.8[p]	13.6[p]	2.2[p]	370[p]	..	..	..	..	4.0[p]	9.4[p]	0.03[p]	5.3[p]	0.02[p]	3.3[p]	0.04[p]	6.8[p]
June	5.8[p]	13.3[p]	2.2[p]	381[p]	..	..	..	..	3.6[p]	8.4[p]	0.03[p]	4.7[p]	0.02[p]	3.6[p]	0.04[p]	6.9[p]
Sept	6.1[p]	13.9[p]	2.3[p]	358[p]	..	..	..	..	3.4[p]	7.8[p]	0.03[p]	4.9[p]	0.02[p]	3.6[p]	0.05[p]	7.4[p]

See notes on first page of table.
1 Per 1,000 population of all ages.
2 Per 1,000 live births.
3 Persons marrying per 1,000 unmarried population aged 16 and over.
4 Persons divorcing per 1,000 married population.
5 Deaths under 1 year.
6 Deaths under 4 weeks.
7 Stillbirths and deaths under 1 week.
8 Per 1,000 live births and stillbirths.
9 A typographical error has been identified in the quarterly divorce figures for Northern Ireland. This error first occurred in Population Trends 113 Autumn 2003. The correct quarterly figures for 2002 and 2003 are as follows:

Year	March	June	Sept	Dec
2002	0.6	0.6	0.5	0.5
2003	0.7	0.5	0.6	0.6

p provisional.

Table 2.2 Key demographic and health indicators

Constituent countries of the United Kingdom

Numbers (thousands), rates, percentages, mean age

				Dependency ratio		Live births					Period expectation of life (in years) at birth		
	Population	Live births	Deaths	Children[1]	Elderly[2]	TFR[3]	Standardised mean age of mother at birth (years)[4]	Unstandardised mean age of mother at birth (years)[5]	Outside marriage as percentage of total live births	Age-standardised mortality rate[6]	Males	Females	Infant mortality rate[7]
United Kingdom													
1976	56,216.1	675.5	680.8	42.1	29.5	1.74	..	26.4	*9.0*	10,486	..	..	14.5
1981	56,357.5	730.7	658.0	37.1	29.7	1.82	27.0	26.8	*12.5*	9,506	70.8	76.8	11.2
1986	56,683.8	754.8	660.7	33.5	29.7	1.78	27.4	27.0	*20.4*	8,914	71.9	77.7	9.5
1991	57,438.7	792.3	646.2	33.2	30.0	1.82	27.7	27.7	*29.8*	8,168	73.2	78.7	7.4
1996	58,164.4	733.2	636.0	33.9	30.0	1.73	28.2	28.6	*35.5*	7,584	74.3	79.4	6.1
1999	58,684.4	700.0	632.1	33.4	29.9	1.68	28.4	28.9	*38.8*	7,318	75.0	79.9	5.8
2000	58,886.1	679.0	608.4	33.1	29.9	1.64	28.5	29.1	*39.5*	6,974	75.4	80.2	5.6
2001	59,113.5	669.1	602.3	32.6	29.8	1.63	28.6	29.2	*40.1*	6,807	75.7	80.4	5.5
2002	59,321.7	668.8	606.2	32.2	29.8	1.64	28.7	29.3	*40.6*	6,765	75.9	80.5	5.2
2003	59,553.8	695.6	612.0	31.8	29.9	1.71	28.8	29.4	*41.5*	6,757	76.3	80.7	5.3
2004	59,834.3	716.0	583.1	31.4	30.0	1.77	28.9	29.4	*42.3*	6,390	76.6	81.0	5.0
2005	60,209.5	722.6	582.7	31.0	30.1	1.79	29.1	29.5	*42.9*	6,259	..	..	5.1
England													
1976	46,659.9	550.4	560.3	41.4	29.7	1.70	..	26.4	*9.2*	10,271	..	..	14.2
1981	46,820.8	598.2	541.0	36.4	29.9	1.79	..	26.8	*12.9*	9,298	71.1	77.0	10.9
1986	47,187.6	623.6	544.5	33.1	29.8	1.76	27.4	27.0	*21.4*	8,725	72.2	77.9	9.5
1991	47,875.0	660.8	534.0	32.9	30.0	1.81	27.7	27.7	*30.1*	8,017	73.4	78.9	7.3
1996	48,519.1	614.2	524.0	33.7	30.0	1.73	28.2	28.7	*35.5*	7,414	74.5	79.6	6.1
1999	49,032.9	589.5	519.6	33.3	29.9	1.69	28.4	29.0	*38.5*	7,138	75.3	80.1	5.7
2000	49,233.3	572.8	501.0	33.0	29.8	1.65	28.5	29.2	*39.1*	6,821	75.7	80.4	5.6
2001	49,449.7	563.7	496.1	32.5	29.7	1.63	28.6	29.3	*39.6*	6,650	76.0	80.6	5.4
2002	49,646.9	565.7	499.1	32.1	29.7	1.65	28.7	29.4	*40.1*	6,603	76.2	80.7	5.2
2003	49,855.7	589.9	503.4	31.8	29.8	1.73	28.9	29.4	*40.9*	6,602	76.6	80.9	5.3
2004	50,093.1	607.2	479.2	31.4	29.9	1.78	29.0	29.5	*41.7*	6,232	76.9	81.2	5.0
2005	50,431.7	613.0	479.4	31.0	29.9	1.80	29.1	29.5	*42.3*	6,110	..	..	5.0
Wales													
1976	2,799.3	33.4	36.3	42.0	30.9	1.78	..	26.0	*8.6*	10,858	..	..	13.7
1981	2,813.5	35.8	35.0	37.6	31.6	1.87	..	26.6	*11.2*	9,846	70.4	76.4	12.6
1986	2,810.9	37.0	34.7	34.3	32.5	1.86	26.9	26.5	*21.1*	9,043	71.6	77.5	9.5
1991	2,873.0	38.1	34.1	34.4	33.5	1.88	27.1	27.0	*32.3*	8,149	73.1	78.8	6.6
1996	2,891.3	34.9	34.6	34.9	33.7	1.81	27.5	27.8	*41.2*	7,758	73.9	79.1	5.6
1999	2,900.6	32.1	35.0	34.4	33.6	1.72	27.6	28.1	*46.1*	7,637	74.7	79.6	6.1
2000	2,906.9	31.3	33.3	34.1	33.5	1.68	27.7	28.2	*47.2*	7,180	74.9	79.8	5.3
2001	2,910.2	30.6	33.0	33.7	33.6	1.66	27.8	28.3	*48.3*	7,017	75.4	80.1	5.4
2002	2,923.4	30.2	33.2	33.2	33.6	1.63	28.0	28.4	*49.7*	6,951	75.7	80.2	4.5
2003	2,938.0	31.4	33.7	32.7	33.7	1.71	28.1	28.5	*50.3*	6,980	76.0	80.4	4.3
2004	2,952.5	32.3	32.1	32.2	33.9	1.77	28.2	28.5	*51.3*	6,582	76.3	80.7	4.9
2005	2,958.6	32.6	32.1	31.8	34.1	1.79	28.4	28.5	*52.4*	6,434	..	..	4.1
Scotland													
1976	5,233.4	64.9	65.3	44.7	28.4	1.79	..	26.0	*9.3*	11,675	..	..	14.8
1981	5,180.2	69.1	63.8	38.2	28.4	1.84	..	26.3	*12.2*	10,849	69.1	75.3	11.3
1986	5,111.8	65.8	63.5	33.6	28.1	1.67	27.1	26.6	*20.6*	10,120	70.2	76.2	8.8
1991	5,083.3	67.0	61.0	32.4	28.9	1.69	27.5	27.4	*29.1*	9,216	71.4	77.1	7.1
1996	5,092.2	59.3	60.7	32.3	29.2	1.56	28.0	28.5	*36.0*	8,791	72.2	77.9	6.2
1999	5,072.0	55.1	60.3	31.7	29.7	1.51	28.3	28.9	*41.2*	8,493	72.8	78.4	5.0
2000	5,062.9	53.1	57.8	31.4	29.8	1.48	28.4	29.0	*42.6*	8,082	73.1	78.6	5.7
2001	5,064.2	52.5	57.4	30.8	30.0	1.49	28.5	29.2	*43.3*	7,930	73.3	78.8	5.5
2002	5,054.8	51.3	58.1	30.3	30.2	1.48	28.6	29.2	*44.0*	7,955	73.5	78.9	5.3
2003	5,057.4	52.4	58.5	29.9	30.3	1.54	28.7	29.3	*45.5*	7,922	73.8	79.1	5.1
2004	5,078.4	54.0	56.2	29.5	30.5	1.60	28.9	29.4	*46.7*	7,536	74.2	79.3	4.9
2005	5,094.8	54.4	55.7	29.1	30.6	1.62	29.0	29.5	*47.1*	7,349	..	..	5.2
Northern Ireland													
1976	1,523.5	26.4	17.0	56.1	25.3	2.68	..	27.4	*5.0*	11,746	..	..	18.3
1981	1,543.0	27.2	16.3	50.6	25.3	2.59	28.1	27.5	*7.0*	10,567	69.2	75.5	13.2
1986	1,573.5	28.0	16.1	46.1	25.5	2.45	28.1	27.5	*12.8*	10,071	70.9	77.1	13.2
1991	1,607.3	26.0	15.1	44.1	26.1	2.16	28.3	28.0	*20.3*	8,303	72.6	78.4	7.4
1996	1,661.8	24.4	15.2	41.8	25.5	1.95	28.7	28.8	*26.0*	7,742	73.8	79.2	5.8
1999	1,679.0	23.0	15.7	40.2	25.5	1.86	28.8	29.0	*30.3*	7,699	74.5	79.6	6.4
2000	1,682.9	21.5	14.9	39.5	25.4	1.75	29.0	29.2	*31.8*	7,279	74.8	79.8	5.1
2001	1,689.3	22.0	14.5	38.6	25.5	1.80	29.1	29.4	*32.5*	6,976	75.2	80.1	6.1
2002	1,696.6	21.4	14.6	37.9	25.7	1.77	29.2	29.5	*33.5*	6,930	75.6	80.4	4.7
2003	1,702.6	21.6	14.5	37.2	25.9	1.81	29.2	29.5	*34.4*	6,744	75.8	80.6	5.3
2004	1,710.3	22.3	14.4	36.4	26.2	1.87	29.4	29.7	*34.5*	6,609	76.0	80.8	5.5
2005	1,724.4	22.3	14.2	35.8	26.3	1.87	29.5	29.7	*36.3*	6,418	..	..	6.3

Note: Death figures for England and Wales represent the number of deaths registered in each year up to 1992, and the number of deaths occurring in each year from 1993 to 2005. Birth and death figures for England and also for Wales each exclude events for persons usually resident outside England and Wales. These events are, however, included in the totals for England and Wales combined, and for the United Kingdom. From 1981 births to non-resident mothers in Northern Ireland are excluded from the figures for Northern Ireland, and for the United Kingdom.

1 Percentage of children under 16 to working population (males 16–64 and females 16–59).

2 Percentage of males 65 and over and females 60 and over to working population (males 16–64 and females 16–59).

3 TFR (total fertility rate) is the number of children that would be born to a woman if current patterns of fertility persisted throughout her childbearing life. It is sometimes called the TPFR (total period fertility rate).

4 Standardised to take account of the age structure of the population.

5 Unstandardised and therefore takes no account of the age structure of the population.

6 Per million population. The age-standardised mortality rate makes allowances for changes in the age structure of the population. See Notes to tables.

7 Deaths at age under one year per 1,000 live births.

Table 3.1 Live births: age of mother

England and Wales

Numbers (thousands), rates, mean age and TFRs

Year and quarter	Age of mother at birth: All ages	Under 20	20–24	25–29	30–34	35–39	40 and over	Mean[1] age (years)	Age of mother at birth: All ages	Under 20	20–24	25–29	30–34	35–39	40 and over	Mean[2] age (years)	TFR[3]
	Total live births (numbers)								Age-specific fertility rates[4]								
1961	811.3	59.8	249.8	248.5	152.3	77.5	23.3	27.6	89.2	37.3	172.6	176.9	103.1	48.1	15.0	27.4	2.77
1964(max)	876.0	76.7	276.1	270.7	153.5	75.4	23.6	27.2	92.9	42.5	181.6	187.3	107.7	49.8	13.7	27.3	2.93
1966	849.8	86.7	285.8	253.7	136.4	67.0	20.1	26.8	90.5	47.7	176.0	174.0	97.3	45.3	12.5	27.1	2.75
1971	783.2	82.6	285.7	247.2	109.6	45.2	12.7	26.2	83.5	50.6	152.9	153.2	77.1	32.8	8.7	26.6	2.37
1976	584.3	57.9	182.2	220.7	90.8	26.1	6.5	26.4	60.4	32.2	109.3	118.7	57.2	18.6	4.8	26.5	1.71
1977(min)	569.3	54.5	174.5	207.9	100.8	25.5	6.0	26.5	58.1	29.4	103.7	117.5	58.6	18.2	4.4	26.6	1.66
1981	634.5	56.6	194.5	215.8	126.6	34.2	6.9	26.8	61.3	28.1	105.3	129.1	68.6	21.7	4.9	27.0	1.79
1986	661.0	57.4	192.1	229.0	129.5	45.5	7.6	27.0	60.6	30.1	92.7	123.8	78.0	24.6	4.8	27.4	1.77
1991	699.2	52.4	173.4	248.7	161.3	53.6	9.8	27.7	63.6	33.0	89.3	119.4	86.7	32.1	5.3	27.7	1.82
1992	689.7	47.9	163.3	244.8	166.8	56.7	10.2	27.9	63.6	31.7	86.1	117.6	87.4	33.4	5.8	27.8	1.80
1993	673.5	45.1	152.0	236.0	171.1	58.8	10.5	28.1	62.7	30.9	82.5	114.4	87.4	34.1	6.2	27.9	1.76
1994	664.7	42.0	140.2	229.1	179.6	63.1	10.7	28.4	62.0	28.9	79.0	112.2	89.4	35.8	6.4	28.1	1.75
1995	648.1	41.9	130.7	217.4	181.2	65.5	11.3	28.5	60.5	28.5	76.4	108.4	88.3	36.3	6.8	28.2	1.72
1996	649.5	44.7	125.7	211.1	186.4	69.5	12.1	28.6	60.6	29.7	77.0	106.6	89.8	37.5	7.2	28.2	1.74
1997	643.1	46.4	118.6	202.8	187.5	74.9	12.9	28.8	60.0	30.2	76.0	104.3	89.8	39.4	7.6	28.3	1.73
1998	635.9	48.3	113.5	193.1	188.5	78.9	13.6	28.9	59.2	30.9	74.9	101.5	90.6	40.4	7.9	28.3	1.72
1999	621.9	48.4	110.7	181.9	185.3	81.3	14.3	29.0	57.8	30.9	73.0	98.3	89.6	40.6	8.1	28.4	1.70
2000	604.4	45.8	107.7	170.7	180.1	85.0	15.1	29.1	55.9	29.3	70.0	94.3	87.9	41.4	8.3	28.5	1.65
2001	594.6	44.2	108.8	159.9	178.9	86.5	16.3	29.2	54.7	28.0	69.0	91.7	88.0	41.5	8.8	28.6	1.63
2002	596.1	43.5	110.9	153.4	180.5	90.5	17.3	29.3	54.7	27.0	69.2	91.6	89.8	43.0	9.1	28.7	1.65
2003	621.5	44.2	116.6	156.9	187.2	97.4	19.1	29.4	56.8	26.8	71.2	96.4	94.8	46.4	9.8	28.8	1.73
2004	639.7	45.1	121.1	160.0	190.6	102.2	20.8	29.4	58.2	26.9	72.7	98.4	99.4	48.9	10.4	28.9	1.78
2005	645.8	44.8	122.1	164.3	188.2	104.1	22.2	29.5	58.4	26.3	71.7	98.8	100.9	50.3	10.8	29.0	1.80
2002 March	143.3	10.5	26.5	37.4	43.2	21.6	4.1	29.3	53.3	26	67	91	87	42	9	28.7	1.61
June	147.2	10.4	26.7	37.9	45.5	22.4	4.3	29.4	54.1	26	67	91	91	43	9	28.8	1.63
Sept	155.0	11.4	28.9	39.9	46.9	23.4	4.5	29.3	56.4	28	72	95	93	44	9	28.7	1.70
Dec	150.6	11.2	28.8	38.2	45.0	23.0	4.5	29.3	54.8	28	71	91	89	44	9	28.7	1.65
2003 March	147.4	10.9	27.9	37.5	44.0	22.6	4.6	29.3	54.6	27	69	93	90	44	10	28.8	1.66
June	155.1	10.7	28.5	39.3	47.4	24.5	4.7	29.5	56.9	26	70	97	96	47	10	28.9	1.73
Sept	162.8	11.5	30.5	41.0	49.3	25.6	5.0	29.4	59.0	28	74	100	99	48	10	28.9	1.79
Dec	156.0	11.2	29.7	39.1	46.5	24.6	4.8	29.4	56.6	27	72	95	94	47	10	28.8	1.72
2004 March	155.2	11.0	29.3	38.7	46.6	24.7	4.9	29.4	56.8	27	71	96	98	47	10	28.9	1.74
June	157.4	10.7	29.3	39.4	47.7	25.2	5.0	29.5	57.6	26	71	97	100	49	10	29.0	1.77
Sept	165.4	11.7	31.4	41.6	49.0	26.3	5.4	29.4	59.9	28	75	102	102	50	11	28.9	1.84
Dec	161.7	11.6	31.1	40.3	47.2	26.0	5.5	29.4	58.6	28	74	99	98	49	11	28.9	1.80
2005 March	154.3	10.9	29.3	38.9	45.0	24.7	5.4	29.5	56.6	26	70	95	98	48	11	29.0	1.74
June	159.8	10.7	29.6	40.3	47.5	26.2	5.4	29.5	57.9	25	70	97	102	51	11	29.1	1.78
Sept	170.2	11.9	32.5	43.7	49.4	26.9	5.7	29.4	61.1	28	76	104	105	52	11	29.0	1.88
Dec	161.7	11.3	30.7	41.4	46.3	26.3	5.7	29.4	58.0	27	72	99	99	50	11	29.0	1.79
2006 March[5p]	159.5	11.1	30.6	40.6	45.2	26.3	5.7	29.5	58.4	26	72	96	102	52	11	29.1	1.80
June[p]	165.9	11.3	31.2	42.9	47.5	27.1	5.9	29.5	60.1	27	73	101	106	53	11	29.1	1.86
Sept[p]	173.5	11.9	33.2	45.1	48.6	28.8	5.9	29.4	62.1	28	76	105	107	56	11	29.1	1.92

Note: The rates for women of all ages, under 20, and 40 and over are based upon the populations of women aged 15–44, 15–19, and 40–44 respectively.

1 Unstandardised and therefore takes no account of the age structure of the population.

2 Standardised to take account of the age structure of the population. This measure is more appropriate for use when analysing trends or making comparisons between different geographies.

3 TFR (total fertility rate) is the number of children that would be born to a woman if current patterns of fertility persisted throughout her childbearing life. It is sometimes called the TPFR (total period fertility rate).

4 Births per 1,000 women in the age group; all quarterly age-specific fertility rates are adjusted for days in the quarter. They are not adjusted for seasonality.

5 Birth rates for 2006 are based on the 2004-based population projections for 2006.

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Table 3.2 Live births outside marriage: age of mother and type of registration

England and Wales

Numbers (thousands), mean age and percentages

Year and quarter	Age of mother at birth: All ages	Under 20	20–24	25–29	30–34	35–39	40 and over	Mean[1] age (years)	Age of mother at birth: All ages	Under 20	20–24	25–29	30–34	35–39	40 and over	Registration[2]: Joint: Same[3] address	Joint: Different[3] addresses	Sole
	Live births outside marriage (numbers)								Percentage of total live births in age group							As a percentage of all births outside marriage		
1971	65.7	21.6	22.0	11.5	6.2	3.2	1.1	23.7	8.4	26.1	7.7	4.7	5.7	7.0	9.0	45.5		54.5
1976	53.8	19.8	16.6	9.7	4.7	2.3	0.7	23.3	9.2	34.2	9.1	4.4	5.2	8.6	10.1	51.0		49.0
1981	81.0	26.4	28.8	14.3	7.9	1.3	0.9	23.4	12.8	46.7	14.8	6.6	6.2	3.9	12.5	58.2		41.8
1986	141.3	39.6	54.1	27.7	13.1	5.7	1.1	23.8	21.4	69.0	28.2	12.1	10.1	12.6	14.7	46.6	19.6	33.8
1991	211.3	43.4	77.8	52.4	25.7	9.8	2.1	24.8	30.2	82.9	44.9	21.1	16.0	18.3	21.3	54.6	19.8	25.6
1992	215.2	40.1	77.1	55.9	28.9	10.9	2.3	25.2	31.2	83.7	47.2	22.8	17.3	19.3	22.9	55.4	20.7	23.9
1993	216.5	38.2	75.0	57.5	31.4	11.9	2.5	25.5	32.2	84.8	49.4	24.4	18.4	20.2	23.5	54.8	22.0	23.2
1994	215.5	35.9	71.0	58.5	34.0	13.4	2.7	25.8	32.4	85.5	50.6	25.5	18.9	21.2	25.2	57.5	19.8	22.7
1995	219.9	36.3	69.7	59.6	37.0	14.4	3.0	26.0	33.9	86.6	53.3	27.4	20.4	22.0	26.2	58.1	20.1	21.8
1996	232.7	39.3	71.1	62.3	40.5	16.2	3.2	26.1	35.8	88.0	56.5	29.5	21.7	23.4	26.7	58.1	19.9	21.9
1997	238.2	41.1	69.5	63.4	42.2	18.2	3.7	26.2	37.0	88.7	58.6	31.3	22.5	24.3	28.6	59.5	19.3	21.2
1998	240.6	43.0	67.8	62.4	43.9	19.6	3.9	26.3	37.8	89.1	59.7	32.3	23.3	24.8	29.0	60.9	18.3	20.8
1999	241.9	43.0	67.5	61.2	45.0	20.8	4.3	26.4	38.9	89.0	61.0	33.6	24.3	25.6	30.2	61.8	18.2	19.9
2000	238.6	41.1	67.5	59.1	43.9	22.3	4.7	26.5	39.5	89.7	62.6	34.6	24.4	26.2	31.0	62.7	18.2	19.2
2001	238.1	39.5	68.1	56.8	45.2	23.3	5.1	26.7	40.0	89.5	62.6	35.5	25.3	26.9	31.6	63.2	18.4	18.4
2002	242.0	38.9	70.2	55.8	46.4	25.1	5.6	26.8	40.6	89.5	63.3	36.4	25.7	27.7	32.2	63.7	18.5	17.8
2003	257.2	39.9	75.7	58.2	49.2	27.8	6.4	26.9	41.4	90.2	64.9	37.1	26.3	28.5	33.3	63.5	19.0	17.4
2004	269.7	41.0	79.8	61.4	50.7	29.7	7.1	27.0	42.2	91.0	65.9	38.4	26.6	29.0	34.0	63.6	19.6	16.8
2005	276.5	41.2	82.1	64.4	50.8	30.3	7.7	27.0	42.8	91.8	67.2	39.2	27.0	29.1	34.8	63.5	20.2	16.3
2002 March	58.0	9.4	16.7	13.6	10.9	6.0	1.3	26.8	40.5	89.4	63.0	36.4	25.4	27.7	31.5	63.2	18.5	18.3
June	58.3	9.3	16.6	13.5	11.4	6.1	1.4	26.8	39.6	89.4	62.2	35.6	25.0	27.2	31.7	64.2	18.2	17.7
Sept	63.4	10.2	18.4	14.6	12.3	6.5	1.5	26.8	40.9	89.3	63.8	36.6	26.1	27.9	32.7	63.9	18.5	17.5
Dec	62.3	10.0	18.4	14.1	11.9	6.5	1.5	26.8	41.4	89.7	64.1	36.9	26.4	28.0	32.8	63.3	18.9	17.8
2003 March	61.0	9.8	18.0	13.9	11.6	6.3	1.5	26.8	41.4	90.1	64.5	37.0	26.9	29.1	33.3	63.0	18.9	18.1
June	62.8	9.6	18.3	14.2	12.2	6.9	1.6	27.0	40.5	90.0	64.0	36.2	25.7	28.3	33.7	64.0	18.5	17.4
Sept	67.6	10.3	20.0	15.3	13.0	7.3	1.7	26.9	41.5	90.2	65.6	38.3	26.4	28.6	33.3	63.7	19.3	18.0
Dec	65.8	10.2	19.5	14.9	12.5	7.3	1.6	26.9	42.2	90.4	65.6	38.0	27.7	29.5	32.9	63.3	19.4	17.4
2004 March	65.2	10.1	19.3	14.8	12.5	7.0	1.7	26.9	42.0	91.2	65.8	38.2	26.8	28.2	34.3	63.1	19.4	17.4
June	65.2	9.8	19.1	14.9	12.5	7.3	1.7	27.0	41.4	91.0	65.1	37.7	26.2	28.8	34.5	63.9	19.5	16.6
Sept	70.2	10.7	20.7	16.1	13.0	7.9	1.8	27.0	42.4	91.2	66.1	38.6	26.5	30.0	33.5	63.7	19.7	16.6
Dec	69.1	10.6	20.7	15.7	12.7	7.5	1.9	26.9	42.7	90.6	66.6	39.0	27.0	29.0	33.9	63.6	19.8	16.6
2005 March	66.3	10.1	19.6	15.2	12.2	7.3	1.9	27.0	43.0	92.0	67.0	39.0	27.1	29.6	35.2	63.1	20.3	16.6
June	66.6	9.8	19.7	15.4	12.5	7.4	1.8	27.0	41.7	91.2	66.5	38.2	26.4	28.1	33.5	63.7	19.8	16.5
Sept	73.7	10.9	22.1	17.3	13.4	7.9	2.1	26.9	43.3	92.0	68.0	39.6	27.2	29.3	35.7	63.7	20.3	16.0
Dec	69.9	10.4	20.7	16.5	12.6	7.7	2.0	27.0	43.2	92.1	67.4	39.8	27.3	29.5	34.8	63.5	20.3	16.2
2006 March[p]	68.7	10.4	20.8	16.0	12.0	7.6	2.0	26.9	43.1	93.2	67.9	39.4	26.5	28.9	34.9	63.1	20.9	16.0
June[p]	71.3	10.5	21.2	16.9	12.8	7.8	2.1	27.0	42.9	92.6	68.1	39.3	26.8	28.9	35.1	63.8	20.6	15.6
Sept[p]	76.1	11.0	22.9	18.4	13.3	8.4	2.2	26.9	43.9	92.9	69.2	40.7	27.3	29.1	36.5	64.2	20.5	15.3

1 Unstandardised and therefore takes no account of the age structure of the population.
2 Births outside marriage can be registered by both the mother and father (joint) or by the mother alone (sole).
3 Usual address(es) of parents.
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Table 4.1 Conceptions: age of woman at conception

England and Wales (residents)

Numbers (thousands) and rates; and percentage terminated by abortion

Year and quarter	Age of woman at conception								
	All ages	Under 16	Under 18	Under 20	20–24	25–29	30–34	35–39	40 and over
	(a) numbers (thousands)								
1991	853.7	7.5	40.1	101.6	233.3	281.5	167.5	57.6	12.1
1996	816.9	8.9	43.5	94.9	179.8	252.6	200.0	75.5	14.1
1999	774.0	7.9	42.0	98.8	157.6	218.5	197.1	86.0	16.0
2000	767.0	8.1	41.3	97.7	159.0	209.3	195.3	88.7	17.0
2001	763.7	7.9	41.0	96.0	161.6	199.3	196.7	92.2	17.8
2002	787.0	7.9	42.0	97.1	167.8	199.4	204.3	98.9	19.6
2003	806.8	8.0	42.2	98.6	175.3	199.8	209.0	103.1	20.9
2004	826.8	7.6	42.2	101.3	181.3	205.1	209.6	106.8	22.8
2005[p]	837.4	7.9	42.2	101.9	184.6	210.1	208.1	109.3	23.4
2002 March	191.6	1.9	10.3	24.1	41.3	48.8	49.0	23.7	4.6
June	190.4	2.0	10.5	24.2	40.7	48.2	48.8	23.8	4.8
Sept	197.4	2.0	10.2	23.4	41.4	50.2	52.4	25.2	4.9
Dec	207.6	2.0	11.0	25.4	44.4	52.3	54.2	26.2	5.2
2003 March	198.2	1.9	10.5	24.5	42.9	49.4	51.2	25.2	4.9
June	198.5	2.1	10.8	24.7	43.2	49.1	51.1	25.2	5.2
Sept	200.1	2.0	10.2	23.7	43.1	49.3	52.8	26.1	5.2
Dec	210.0	2.0	10.7	25.7	46.1	52.0	54.0	26.7	5.6
2004 March	207.9	2.0	10.9	26.2	45.9	51.1	52.6	26.6	5.6
June	200.1	1.9	10.6	25.0	43.7	49.3	50.4	25.9	5.7
Sept	203.6	1.8	10.0	24.0	44.1	50.7	52.7	26.6	5.6
Dec	215.2	1.9	10.8	26.1	47.7	54.0	54.0	27.6	5.8
2005 March[p]	204.6	1.9	10.4	25.1	45.4	50.8	51.0	26.6	5.7
June[p]	204.6	2.0	10.5	25.1	45.2	51.0	50.7	26.9	5.8
Sept[p]	210.7	2.0	10.4	25.3	45.6	53.3	53.1	27.5	6.0
Dec[p]	217.6	2.0	10.9	26.4	48.4	55.1	53.3	28.4	5.8
2006 March[2p]	213.6	1.8	10.1	25.1	46.7	53.3	51.7	27.9	6.1
	(b) rates (conceptions per thousand women in age group)[1]								
1991	77.7	8.9	44.6	64.1	120.2	135.1	90.1	34.4	6.6
1996	76.2	9.5	46.3	63.2	110.1	127.6	96.3	40.7	8.4
1999	71.9	8.3	45.1	63.1	103.9	118.0	95.3	42.9	9.1
2000	70.9	8.3	43.9	62.5	103.2	115.7	95.3	43.2	9.4
2001	70.3	8.0	42.7	60.8	102.5	114.2	96.7	44.3	9.6
2002	72.2	7.9	42.8	60.3	104.6	119.1	101.6	47.0	10.3
2003	73.7	8.0	42.3	59.8	107.1	122.8	105.9	49.1	10.7
2004	75.3	7.5	41.7	60.3	108.9	126.2	109.4	51.0	11.4
2005[p]	75.7	7.8	41.3	59.8	108.4	126.3	111.6	52.8	11.4
2002 March	71.3	7.7	42.9	61.3	105.1	116.4	98.4	45.8	9.9
June	70.1	8.1	42.9	60.4	101.9	114.8	97.1	45.5	10.2
Sept	71.8	7.7	41.2	57.5	102.1	119.4	103.5	47.6	10.2
Dec	75.4	8.0	44.1	62.1	108.9	125.1	107.6	49.4	10.7
2003 March	73.5	7.8	42.8	60.8	107.2	121.8	104.5	48.6	10.3
June	72.8	8.3	43.3	60.3	106.1	120.6	103.5	48.0	10.8
Sept	72.5	7.9	40.5	56.8	104.2	120.2	106.4	49.3	10.5
Dec	76.0	7.8	42.5	61.4	110.9	126.8	109.7	50.5	11.2
2004 March	76.2	7.8	43.4	63.1	111.5	126.3	109.1	51.1	11.4
June	73.3	7.7	42.1	60.1	105.8	122.1	105.3	49.8	11.5
Sept	73.7	7.1	39.2	56.8	105.0	123.6	109.8	50.6	11.1
Dec	77.8	7.4	42.4	61.6	113.0	131.1	113.2	52.8	11.4
2005 March[p]	75.2	7.6	41.4	60.0	109.0	124.9	109.9	51.8	11.4
June[p]	74.3	7.9	41.1	59.1	106.8	123.2	108.7	52.0	11.4
Sept[p]	75.6	7.8	40.5	58.9	106.0	126.6	113.4	52.7	11.6
Dec[p]	78.0	7.8	42.3	61.5	112.4	130.1	115.0	54.6	11.2
2006 March[2p]	78.2	7.1	40.1	59.6	110.4	127.6	115.1	54.9	12.0
	(c) percentage terminated by abortion								
1991	*19.4*	*51.1*	*39.9*	*34.5*	*22.2*	*13.4*	*13.7*	*22.0*	*41.6*
1996	*20.8*	*49.2*	*40.0*	*36.2*	*25.7*	*15.6*	*14.1*	*21.2*	*37.6*
1999	*22.6*	*52.6*	*43.0*	*38.6*	*28.5*	*17.5*	*14.7*	*21.2*	*37.0*
2000	*22.7*	*54.0*	*44.2*	*39.3*	*29.2*	*17.7*	*14.5*	*20.5*	*35.4*
2001	*23.2*	*55.8*	*45.7*	*40.4*	*29.7*	*18.4*	*14.6*	*20.4*	*34.6*
2002	*22.5*	*55.6*	*45.3*	*39.9*	*28.8*	*17.9*	*13.9*	*19.5*	*34.6*
2003	*22.5*	*57.4*	*45.7*	*40.2*	*29.0*	*17.9*	*13.6*	*18.9*	*34.7*
2004	*22.4*	*57.2*	*45.6*	*40.1*	*28.9*	*18.2*	*13.2*	*18.3*	*33.0*
2005[p]	*22.3*	*57.1*	*46.4*	*40.4*	*28.7*	*18.0*	*13.2*	*17.8*	*33.0*
2002 March	*22.9*	*54.3*	*44.9*	*40.2*	*29.4*	*18.1*	*14.1*	*19.8*	*35.1*
June	*22.9*	*55.5*	*45.0*	*39.4*	*28.9*	*18.4*	*14.5*	*20.1*	*34.8*
Sept	*21.6*	*56.1*	*45.0*	*39.4*	*27.8*	*17.3*	*13.2*	*18.7*	*34.2*
Dec	*22.6*	*56.4*	*46.3*	*40.7*	*29.0*	*17.8*	*13.9*	*19.4*	*34.5*
2003 March	*22.8*	*58.9*	*46.1*	*40.2*	*29.5*	*17.9*	*13.8*	*19.7*	*34.5*
June	*23.1*	*58.3*	*46.2*	*40.9*	*29.3*	*18.4*	*14.2*	*19.2*	*36.1*
Sept	*21.6*	*56.9*	*45.3*	*39.5*	*28.0*	*17.1*	*13.0*	*18.0*	*33.8*
Dec	*22.5*	*55.7*	*45.0*	*40.3*	*29.0*	*18.1*	*13.5*	*18.5*	*34.5*
2004 March	*22.7*	*58.2*	*45.7*	*40.2*	*29.4*	*18.5*	*13.4*	*18.2*	*32.9*
June	*23.0*	*57.2*	*46.3*	*40.8*	*29.2*	*18.6*	*13.7*	*19.2*	*33.5*
Sept	*21.9*	*56.8*	*45.8*	*40.0*	*28.4*	*17.9*	*12.8*	*17.8*	*33.0*
Dec	*22.0*	*56.3*	*44.5*	*39.3*	*28.6*	*17.8*	*13.0*	*18.2*	*32.5*
2005 March[p]	*22.5*	*57.5*	*47.3*	*41.1*	*29.2*	*18.1*	*13.1*	*18.0*	*32.6*
June[p]	*22.7*	*57.1*	*45.8*	*40.3*	*28.9*	*18.6*	*13.9*	*17.9*	*33.8*
Sept[p]	*21.4*	*56.1*	*45.3*	*39.1*	*27.5*	*17.5*	*12.6*	*17.2*	*32.1*
Dec[p]	*22.6*	*57.5*	*47.2*	*41.0*	*29.1*	*18.1*	*13.3*	*18.0*	*33.4*
2006 March[2p]	*22.4*	*59.2*	*48.0*	*41.9*	*29.5*	*18.6*	*13.1*	*17.6*	*31.4*

Note: Conception figures are estimates derived from birth registrations and abortion notifications.
Rates for women of all ages, under 16, under 18, under 20 and 40 and over are based on the population of women aged 15–44, 13–15, 15–17, 15–19 and 40–44 respectively.
For a quarterly analysis of conceptions to women under 18 for local authority areas see the National Statistics website, www.statistics.gov.uk

1 Conception rates for 2006 are based on the 2004-based population projections for 2006.
2 Figures for conceptions by age for the March quarter of 2006 exclude maternities where the mother's age was not recorded.
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Table 4.2 Abortions: residents and non-residents; age and gestation (residents only)

England and Wales

Numbers (thousands) and rates; and percentages for gestation weeks

Year and quarter	All ages: All[1] women	All ages: Residents[1]	All ages: Non-[1] residents	All women (residents): Age group: Under 16	16–19	20–24	25–29	30–34	35–44	45 and over	Gestation weeks (percentages): Under 9	9–12	13–19	20 and over
	Numbers (thousands)										**Percentages**			
1976	129.7	101.9	27.8	3.4	24.0	23.6	19.3	14.6	14.7	0.5	*24.8*	*55.8*	*15.0*	*1.1*
1981	162.5	128.6	33.9	3.5	31.4	34.3	21.9	18.7	17.6	0.6	*31.0*	*53.4*	*13.5*	*1.3*
1986	172.3	147.6	24.7	3.9	33.8	45.3	28.7	18.0	17.5	0.4	*33.4*	*53.8*	*11.5*	*1.4*
1991	179.5	167.4	12.1	3.2	31.1	52.7	38.6	23.4	17.9	0.4	*35.2*	*52.9*	*10.6*	*1.2*
1996	177.5	167.9	9.6	3.6	28.8	46.4	39.3	28.2	21.1	0.4	*40.0*	*48.7*	*10.1*	*1.3*
1997	179.7	170.1	9.6	3.4	29.9	45.0	40.2	28.9	22.3	0.5	*41.2*	*47.9*	*9.6*	*1.2*
1998	187.4	177.9	9.5	3.8	33.2	45.8	40.4	30.4	23.8	0.5	*41.4*	*47.6*	*9.7*	*1.3*
1999	183.2	173.7	9.5	3.6	32.8	45.0	38.5	29.1	24.1	0.5	*42.5*	*46.5*	*9.5*	*1.4*
2000	185.4	175.5	9.8	3.7	33.2	47.1	37.9	28.7	24.4	0.5	*43.3*	*45.0*	*10.3*	*1.5*
2001	186.3	176.4	9.9	3.7	33.4	48.3	36.5	28.8	25.2	0.5	*42.8*	*45.0*	*10.6*	*1.6*
2002	185.4	175.9	9.5	3.7	33.0	48.4	35.8	28.5	26.0	0.5	*42.2*	*45.2*	*11.0*	*1.6*
2003	190.7	181.6	9.1	4.0	34.2	51.1	36.0	28.7	26.9	0.5	*43.6*	*43.7*	*11.1*	*1.6*
2004	194.5	185.7	8.8	3.8	35.5	52.8	37.8	28.1	27.3	0.5	*46.2*	*41.5*	*10.8*	*1.6*
2005	194.4	186.4	7.9	3.8	35.3	53.3	38.3	27.8	27.2	0.6	*53.6*	*35.7*	*9.3*	*1.4*
2002 March	47.6	45.2	2.5	0.9	8.6	12.6	9.2	7.3	6.5	0.1	*38.9*	*47.4*	*12.0*	*1.6*
June	45.9	43.5	2.5	0.9	8.2	12.0	8.9	7.0	6.4	0.1	*40.0*	*46.4*	*11.8*	*1.8*
Sept	46.5	44.1	2.4	1.0	8.2	11.9	8.9	7.3	6.6	0.1	*42.9*	*45.1*	*10.4*	*1.6*
Dec	45.3	43.2	2.1	0.9	8.0	11.9	8.8	6.9	6.5	0.1	*47.0*	*41.8*	*9.7*	*1.5*
2003 March	50.0	47.6	2.4	1.0	9.1	13.4	9.4	7.5	7.0	0.1	*40.9*	*45.3*	*12.2*	*1.6*
June	47.7	45.4	2.3	1.0	8.5	12.7	9.1	7.2	6.7	0.1	*42.5*	*44.4*	*11.4*	*1.6*
Sept	47.7	44.8	2.3	1.0	8.3	12.5	8.9	7.2	6.7	0.1	*43.3*	*43.9*	*11.2*	*1.5*
Dec	46.0	43.9	2.1	0.9	8.3	12.5	8.6	6.9	6.5	0.1	*47.7*	*41.0*	*9.6*	*1.7*
2004 March	51.1	48.7	2.4	1.0	9.4	13.9	9.8	7.5	7.0	0.1	*41.7*	*44.5*	*12.1*	*1.7*
June	48.9	46.6	2.3	1.0	8.9	13.3	9.5	6.9	6.9	0.1	*43.6*	*43.3*	*11.2*	*1.8*
Sept	48.4	46.3	2.1	1.0	8.9	13.0	9.4	7.0	6.9	0.1	*47.8*	*40.5*	*10.3*	*1.4*
Dec	46.1	44.2	1.9	1.0	8.4	12.6	9.1	6.6	6.5	0.1	*52.0*	*37.2*	*9.5*	*1.3*
2005 March	50.1	47.9	2.1	0.9	9.1	13.9	9.7	7.2	7.0	0.1	*47.2*	*40.4*	*11.0*	*1.4*
June	50.1	48.0	2.1	1.0	9.2	13.9	9.9	7.1	6.9	0.1	*53.8*	*35.6*	*9.2*	*1.4*
Sept	47.0	45.1	1.9	1.0	8.5	12.7	9.3	6.9	6.7	0.1	*56.5*	*33.6*	*8.5*	*1.3*
Dec	47.2	45.3	1.8	0.9	8.6	12.9	9.5	6.7	6.7	0.1	*57.2*	*32.9*	*8.3*	*1.5*
2006 March[p]	52.4	50.4	2.0	1.0	9.8	14.6	10.4	7.2	7.2	0.2	*50.7*	*37.3*	*10.5*	*1.6*
June[p]	51.3	49.3	2.0	1.0	9.4	14.2	10.3	7.2	7.0	0.2	*53.6*	*35.3*	*9.4*	*1.7*
Sept[p]	49.2	47.4	1.8	1.0	9.1	13.5	9.9	6.9	6.8	0.2	*56.1*	*33.3*	*9.1*	*1.5*
Rates (per thousand women residents)	ASR[3] (women 15–44)	Crude rate[2] (women 15–44)												
1976	10.2	10.5	:	2.9	16.9	14.2	10.4	9.2	5.3	0.3				
1981	11.9	12.4	:	3.0	19.4	18.6	13.1	10.1	5.9	0.4				
1986	13.0	13.5	:	3.7	22.0	21.9	15.5	10.8	5.1	0.3				
1991	15.0	15.2	:	3.8	24.0	27.1	18.5	12.6	5.1	0.3				
1996	16.0	15.7	:	3.9	24.2	28.4	19.9	13.6	6.0	0.2				
1997	16.3	15.9	:	3.7	24.4	28.8	20.7	13.8	6.2	0.3				
1998	17.1	16.6	:	4.0	26.8	30.2	21.2	14.6	6.5	0.3				
1999	16.8	16.2	:	3.8	26.3	29.7	20.8	14.1	6.4	0.3				
2000	17.0	16.3	:	3.9	26.9	30.7	20.9	14.1	6.3	0.3				
2001	17.0	16.2	:	3.7	26.6	30.6	20.9	14.2	6.4	0.3				
2002	17.0	16.1	:	3.7	25.8	30.1	21.4	14.2	6.5	0.3				
2003	17.5	16.6	:	3.9	26.1	31.2	22.1	14.6	6.6	0.3				
2004	17.8	16.9	:	3.7	26.5	31.9	23.3	14.7	6.7	0.3				
2005	17.8	17.0	:	3.7	26.3	32.0	23.6	14.5	6.6	0.3				
2002 March	17.4	16.6	:	3.7	26.9	31.6	21.7	14.4	6.6	0.2				
June	16.7	15.9	:	3.7	25.6	29.9	21.1	13.9	6.4	0.3				
Sept	16.9	16.1	:	3.8	25.1	29.2	21.9	14.8	6.5	0.2				
Dec	16.5	15.7	:	3.7	24.7	29.2	21.4	13.9	6.4	0.3				
2003 March	18.3	17.4	:	4.0	28.0	33.0	22.9	15.1	6.9	0.3				
June	17.4	16.6	:	4.0	26.1	31.1	22.3	14.5	6.6	0.3				
Sept	17.2	16.4	:	4.0	25.3	30.6	21.8	14.6	6.6	0.3				
Dec	16.8	16.0	:	3.7	25.2	30.4	21.1	14.2	6.4	0.3				
2004 March	18.7	17.8	:	3.9	28.3	33.8	24.1	15.4	6.9	0.3				
June	17.9	17.0	:	3.8	26.7	32.3	23.3	14.4	6.7	0.3				
Sept	17.8	16.9	:	3.7	26.6	31.5	23.0	14.8	6.8	0.3				
Dec	17.0	16.2	:	3.5	25.0	30.4	22.3	14.2	6.3	0.3				
2005 March	18.4	17.5	:	3.7	27.0	33.5	23.8	15.2	6.8	0.3				
June	18.4	17.5	:	3.8	27.2	33.3	24.1	15.3	6.7	0.3				
Sept	17.3	16.4	:	3.8	25.2	30.5	22.6	14.8	6.5	0.3				
Dec	17.4	16.5	:	3.6	25.4	30.9	23.0	14.4	6.5	0.3				
2006 March[p]	19.3	18.4	:	3.9	29.0	34.8	25.0	15.9	7.0	0.3				
June[p]	18.8	18.0	:	3.9	27.8	33.7	24.7	16.0	6.8	0.4				
Sept[p]	18.1	17.3	:	4.0	26.7	31.7	23.6	15.6	6.6	0.4				

Notes: Rates for Under 16 and 45 and over are based on female populations aged 13–15 and 45–49 respectively.
1 Includes cases with not stated age and/or gestation week.
2 Includes incomplete forms that have been returned to practitioners.
3 Rates for all women residents age-standardised to the European population for ages 15–44.
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Table 5.1 Period expectation of life at birth and selected age

Constituent countries of the United Kingdom

Years

Year	Males								Year	Females							
	At birth	At age								At birth	At age						
		5	20	30	50	60	70	80			5	20	30	50	60	70	80
United Kingdom																	
1981	70.8	66.9	52.3	42.7	24.1	16.3	10.1	5.8	1981	76.8	72.7	57.9	48.2	29.2	20.8	13.3	7.5
1986	71.9	67.8	53.2	43.6	24.9	16.8	10.5	6.0	1986	77.7	73.4	58.6	48.8	29.8	21.2	13.8	7.8
1991	73.2	68.9	54.2	44.7	26.0	17.7	11.1	6.4	1991	78.7	74.3	59.5	49.7	30.6	21.9	14.3	8.2
1996	74.3	69.8	55.1	45.6	26.9	18.5	11.6	6.6	1996	79.4	74.9	60.1	50.3	31.2	22.3	14.5	8.3
1997	74.5	70.1	55.4	45.9	27.2	18.8	11.7	6.7	1997	79.6	75.1	60.2	50.4	31.3	22.5	14.6	8.4
1998	74.8	70.3	55.6	46.1	27.4	18.9	11.9	6.7	1998	79.7	75.2	60.4	50.5	31.4	22.6	14.7	8.4
1999	75.0	70.6	55.9	46.3	27.6	19.2	12.0	6.8	1999	79.9	75.4	60.5	50.7	31.6	22.8	14.8	8.5
2000	75.4	70.9	56.2	46.6	28.0	19.5	12.3	7.0	2000	80.2	75.6	60.8	51.0	31.9	23.0	15.0	8.6
2001	75.7	71.2	56.5	46.9	28.3	19.8	12.5	7.1	2001	80.4	75.9	61.0	51.2	32.1	23.2	15.2	8.7
2002	75.9	71.5	56.7	47.2	28.5	20.0	12.6	7.2	2002	80.5	76.0	61.1	51.3	32.2	23.3	15.2	8.7
2003	76.3	71.8	57.0	47.4	28.8	20.2	12.9	7.3	2003	80.7	76.2	61.3	51.5	32.4	23.4	15.3	8.7
2004	76.6	72.1	57.4	47.8	29.0	20.5	13.1	7.4	2004	81.0	76.4	61.5	51.7	32.6	23.6	15.5	8.8
England and Wales																	
1981	71.0	67.1	52.5	42.9	24.3	16.4	10.1	5.8	1981	77.0	72.9	58.1	48.3	29.4	20.9	13.4	7.5
1986	72.1	68.0	53.4	43.8	25.0	16.9	10.5	6.1	1986	77.9	73.6	58.8	49.0	30.0	21.4	13.9	7.9
1991	73.4	69.1	54.4	44.8	26.1	17.8	11.2	6.4	1991	78.9	74.5	59.7	49.9	30.8	22.0	14.4	8.3
1996	74.5	70.1	55.4	45.8	27.1	18.7	11.6	6.6	1996	79.6	75.1	60.2	50.4	31.3	22.5	14.6	8.4
1997	74.8	70.3	55.6	46.1	27.4	18.9	11.8	6.7	1997	79.7	75.2	60.4	50.6	31.5	22.6	14.7	8.4
1998	75.0	70.6	55.8	46.3	27.6	19.1	11.9	6.8	1998	79.9	75.4	60.5	50.7	31.6	22.7	14.8	8.4
1999	75.3	70.8	56.1	46.5	27.8	19.3	12.1	6.9	1999	80.1	75.6	60.7	50.9	31.8	22.9	14.9	8.5
2000	75.6	71.2	56.4	46.9	28.1	19.6	12.3	7.0	2000	80.3	75.8	61.0	51.1	32.0	23.1	15.1	8.6
2001	76.0	71.5	56.7	47.2	28.5	19.9	12.6	7.1	2001	80.6	76.0	61.2	51.4	32.2	23.3	15.2	8.7
2002	76.2	71.7	57.0	47.4	28.7	20.1	12.7	7.2	2002	80.7	76.1	61.3	51.5	32.3	23.4	15.3	8.7
2003	76.5	72.0	57.3	47.7	28.9	20.4	13.0	7.3	2003	80.9	76.4	61.5	51.7	32.5	23.6	15.4	8.8
2004	76.9	72.4	57.6	48.0	29.2	20.6	13.2	7.4	2004	81.1	76.6	61.7	51.9	32.7	23.8	15.6	8.9
England																	
1981	71.1	67.1	52.5	42.9	24.3	16.4	10.1	5.8	1981	77.0	72.9	58.2	48.4	29.4	20.9	13.4	7.5
1986	72.2	68.1	53.4	43.8	25.1	17.0	10.6	6.1	1986	77.9	73.6	58.8	49.0	30.0	21.4	13.9	7.9
1991	73.4	69.1	54.4	44.9	26.2	17.8	11.2	6.4	1991	78.9	74.5	59.7	49.9	30.8	22.0	14.4	8.3
1996	74.5	70.1	55.4	45.9	27.1	18.7	11.7	6.6	1996	79.6	75.1	60.3	50.5	31.3	22.5	14.6	8.4
1997	74.8	70.4	55.6	46.1	27.4	18.9	11.8	6.7	1997	79.8	75.3	60.4	50.6	31.5	22.6	14.7	8.4
1998	75.0	70.6	55.9	46.3	27.6	19.1	12.0	6.8	1998	79.9	75.4	60.6	50.7	31.6	22.7	14.8	8.5
1999	75.3	70.9	56.1	46.6	27.9	19.4	12.1	6.9	1999	80.1	75.6	60.8	50.9	31.8	22.9	14.9	8.5
2000	75.7	71.2	56.5	46.9	28.2	19.6	12.4	7.0	2000	80.4	75.8	61.0	51.2	32.0	23.1	15.1	8.6
2001	76.0	71.5	56.8	47.2	28.5	19.9	12.6	7.1	2001	80.6	76.1	61.2	51.4	32.3	23.4	15.3	8.7
2002	76.2	71.8	57.0	47.4	28.7	20.1	12.8	7.2	2002	80.7	76.2	61.3	51.5	32.4	23.4	15.3	8.7
2003	76.6	72.1	57.3	47.7	29.0	20.4	13.0	7.3	2003	80.9	76.4	61.5	51.7	32.6	23.6	15.5	8.8
2004	76.9	72.4	57.6	48.0	29.3	20.7	13.2	7.5	2004	81.2	76.6	61.8	51.9	32.8	23.8	15.6	8.9
Wales																	
1981	70.4	66.5	51.9	42.2	23.6	15.8	9.7	5.6	1981	76.4	72.3	57.5	47.7	28.9	20.5	13.1	7.4
1986	71.6	67.5	52.8	43.2	24.6	16.6	10.3	6.0	1986	77.5	73.3	58.5	48.7	29.7	21.1	13.7	7.8
1991	73.1	68.8	54.1	44.6	25.8	17.6	11.0	6.4	1991	78.8	74.3	59.5	49.7	30.6	21.8	14.3	8.3
1996	73.9	69.4	54.7	45.3	26.6	18.2	11.3	6.4	1996	79.1	74.6	59.7	49.9	30.9	22.1	14.4	8.3
1997	74.3	69.8	55.1	45.6	26.9	18.5	11.6	6.6	1997	79.3	74.8	60.0	50.2	31.1	22.3	14.5	8.4
1998	74.4	70.0	55.2	45.8	27.1	18.6	11.6	6.6	1998	79.4	74.9	60.0	50.2	31.1	22.3	14.5	8.3
1999	74.7	70.2	55.5	46.1	27.4	18.9	11.9	6.8	1999	79.6	75.1	60.2	50.4	31.3	22.5	14.6	8.4
2000	74.9	70.5	55.8	46.3	27.6	19.1	12.0	6.8	2000	79.8	75.3	60.4	50.6	31.5	22.6	14.7	8.4
2001	75.4	70.9	56.2	46.7	28.0	19.5	12.3	7.1	2001	80.1	75.5	60.6	50.8	31.8	22.9	14.9	8.5
2002	75.7	71.1	56.3	46.9	28.2	19.7	12.4	7.1	2002	80.2	75.6	60.7	50.9	31.8	22.9	15.0	8.6
2003	76.0	71.4	56.7	47.1	28.5	20.0	12.6	7.2	2003	80.4	75.8	60.9	51.1	32.0	23.1	15.1	8.6
2004	76.3	71.8	57.0	47.4	28.8	20.3	12.8	7.3	2004	80.7	76.0	61.2	51.3	32.2	23.3	15.2	8.7
Scotland																	
1981	69.1	65.2	50.6	41.1	22.9	15.4	9.6	5.5	1981	75.3	71.2	56.4	46.7	27.9	19.7	12.7	7.2
1986	70.2	66.0	51.4	41.9	23.5	15.8	9.9	5.7	1986	76.2	71.9	57.1	47.3	28.4	20.1	13.0	7.5
1991	71.4	67.1	52.5	43.0	24.6	16.6	10.4	6.1	1991	77.1	72.7	57.9	48.1	29.2	20.7	13.5	7.9
1996	72.2	67.8	53.1	43.7	25.3	17.3	10.9	6.3	1996	77.9	73.3	58.5	48.8	29.8	21.2	13.8	8.0
1997	72.4	68.0	53.3	43.9	25.6	17.5	11.0	6.4	1997	78.0	73.5	58.7	48.9	30.0	21.4	13.9	8.0
1998	72.6	68.2	53.5	44.2	25.8	17.8	11.1	6.5	1998	78.2	73.6	58.8	49.0	30.1	21.4	13.9	8.0
1999	72.8	68.4	53.7	44.4	26.0	18.0	11.3	6.6	1999	78.4	73.8	59.0	49.2	30.3	21.6	14.0	8.1
2000	73.1	68.6	53.9	44.6	26.3	18.2	11.5	6.6	2000	78.6	74.0	59.2	49.4	30.5	21.8	14.1	8.1
2001	73.3	68.8	54.2	44.8	26.6	18.4	11.7	6.8	2001	78.8	74.2	59.4	49.6	30.7	22.0	14.3	8.2
2002	73.5	69.0	54.3	45.0	26.7	18.6	11.8	6.8	2002	78.9	74.3	59.5	49.7	30.8	22.1	14.4	8.2
2003	73.8	69.3	54.6	45.2	27.0	18.8	12.0	6.9	2003	79.1	74.5	59.7	49.9	30.9	22.2	14.5	8.3
2004	74.2	69.7	55.0	45.6	27.3	19.1	12.2	7.0	2004	79.3	74.7	59.9	50.1	31.1	22.4	14.7	8.4
Northern Ireland																	
1981	69.2	65.4	50.9	41.5	23.2	15.6	9.7	5.8	1981	75.5	71.6	56.8	47.1	28.3	20.0	12.8	7.3
1986	70.9	66.8	52.2	42.7	24.2	16.4	10.4	6.2	1986	77.1	72.9	58.1	48.3	29.3	20.8	13.4	7.8
1991	72.6	68.2	53.6	44.1	25.5	17.3	11.0	6.4	1991	78.4	74.0	59.2	49.4	30.3	21.6	14.2	8.3
1996	73.8	69.4	54.7	45.3	26.6	18.2	11.4	6.6	1996	79.2	74.7	59.9	50.0	30.9	22.1	14.4	8.4
1997	74.2	69.7	55.0	45.5	26.8	18.4	11.5	6.6	1997	79.5	75.0	60.2	50.3	31.2	22.4	14.5	8.4
1998	74.3	69.8	55.2	45.7	27.0	18.6	11.6	6.6	1998	79.5	75.0	60.2	50.4	31.2	22.4	14.5	8.2
1999	74.5	70.0	55.4	45.9	27.2	18.8	11.7	6.6	1999	79.6	75.1	60.2	50.4	31.3	22.5	14.6	8.2
2000	74.8	70.4	55.7	46.2	27.6	19.1	11.9	6.6	2000	79.8	75.2	60.4	50.6	31.5	22.6	14.6	8.2
2001	75.2	70.7	56.1	46.6	27.9	19.4	12.3	6.9	2001	80.1	75.6	60.7	50.9	31.8	22.9	14.9	8.4
2002	75.6	71.1	56.4	46.9	28.2	19.7	12.4	7.0	2002	80.4	75.9	61.0	51.2	32.0	23.1	15.1	8.5
2003	75.8	71.4	56.7	47.1	28.4	19.9	12.6	7.2	2003	80.6	76.0	61.1	51.3	32.2	23.3	15.2	8.6
2004	76.0	71.6	56.9	47.4	28.7	20.2	12.8	7.3	2004	80.8	76.3	61.4	51.6	32.5	23.5	15.4	8.7

Note: Figures from 1981 are calculated from the population estimates revised in the light of the 2001 Census. All figures are based on a three-year period.

Table 6.1 Deaths: age and sex

England and Wales

Numbers (thousands) and rates

Year and quarter	All ages	Age group: Under 1[1]	1–4	5–9	10–14	15–19	20–24	25–34	35–44	45–54	55–64	65–74	75–84	85 and over
Numbers (thousands)														
Males														
1976	300.1	4.88	0.88	0.68	0.64	1.66	1.66	3.24	5.93	20.4	52.0	98.7	80.3	29.0
1981	289.0	4.12	0.65	0.45	0.57	1.73	1.58	3.18	5.54	16.9	46.9	92.2	86.8	28.5
1986	287.9	3.72	0.57	0.33	0.38	1.43	1.75	3.10	5.77	14.4	43.6	84.4	96.2	32.2
1991	277.6	2.97	0.55	0.34	0.35	1.21	1.76	3.69	6.16	13.3	34.9	77.2	95.8	39.3
1996	268.7	2.27	0.44	0.24	0.29	0.93	1.41	4.06	5.84	13.6	30.1	71.0	90.7	47.8
1999	264.3	2.08	0.41	0.22	0.28	0.90	1.27	3.85	5.93	13.6	28.7	64.3	90.4	52.3
2000	255.5	1.89	0.34	0.22	0.28	0.87	1.22	3.76	6.05	13.4	27.9	60.6	87.1	51.9
2001	252.4	1.81	0.32	0.19	0.28	0.88	1.27	3.63	6.07	13.3	27.5	57.5	87.0	52.7
2002	253.1	1.81	0.32	0.20	0.28	0.83	1.24	3.47	6.20	12.9	27.7	56.3	88.3	53.6
2003	253.9	1.81	0.31	0.19	0.24	0.81	1.23	3.26	6.32	12.7	28.2	55.1	89.6	54.0
2004	244.1	1.79	0.29	0.17	0.26	0.78	1.15	3.10	6.19	12.2	27.0	52.5	87.3	51.3
2005	243.3	1.87	0.28	0.16	0.25	0.75	1.11	2.89	6.14	12.1	27.3	51.0	84.8	54.7
Females														
1976	298.5	3.46	0.59	0.45	0.42	0.62	0.67	1.94	4.04	12.8	29.6	67.1	104.7	72.1
1981	288.9	2.90	0.53	0.30	0.37	0.65	0.64	1.82	3.74	10.5	27.2	62.8	103.6	73.9
1986	293.3	2.59	0.49	0.25	0.27	0.56	0.67	1.65	3.83	8.8	25.8	58.4	106.5	83.6
1991	292.5	2.19	0.44	0.25	0.22	0.46	0.64	1.73	3.70	8.4	21.3	54.2	103.3	95.7
1996	291.5	1.69	0.32	0.18	0.20	0.43	0.51	1.85	3.66	8.9	18.2	50.2	96.7	108.7
1999	291.8	1.55	0.30	0.17	0.22	0.39	0.47	1.67	3.79	9.0	18.0	45.1	93.9	117.2
2000	280.1	1.49	0.25	0.16	0.18	0.38	0.47	1.69	3.87	9.1	17.6	42.2	89.3	113.4
2001	277.9	1.43	0.27	0.19	0.18	0.38	0.47	1.59	3.77	8.9	17.6	40.5	88.8	113.9
2002	280.4	1.31	0.24	0.16	0.19	0.38	0.43	1.61	3.77	8.7	17.7	39.6	90.0	116.3
2003	284.4	1.50	0.28	0.15	0.19	0.35	0.46	1.57	3.86	8.5	18.0	39.0	92.7	117.9
2004	268.4	1.43	0.23	0.13	0.16	0.38	0.46	1.49	3.80	8.1	17.6	36.9	88.3	109.4
2005	269.4	1.39	0.22	0.13	0.18	0.37	0.46	1.42	3.73	8.1	17.8	36.0	86.4	113.2
Rates (deaths per 1,000 population in each age group)														
Males														
1976	12.5	16.2	0.65	0.34	0.31	0.88	0.96	0.92	2.09	6.97	19.6	50.3	116.4	243.2
1981	12.0	12.6	0.53	0.27	0.29	0.82	0.83	0.89	1.83	6.11	17.7	45.6	105.2	226.5
1986	11.8	11.0	0.44	0.21	0.23	0.72	0.83	0.88	1.68	5.27	16.6	42.8	101.2	215.4
1991	11.2	8.3	0.40	0.21	0.23	0.72	0.89	0.94	1.76	4.56	13.9	38.1	93.1	205.6
1996	10.7	6.8	0.32	0.14	0.18	0.60	0.85	1.01	1.67	4.06	11.9	34.5	85.0	198.8
1999	10.4	6.5	0.31	0.12	0.16	0.56	0.83	0.99	1.60	3.99	10.9	31.6	79.9	194.4
2000	10.0	6.1	0.26	0.13	0.16	0.54	0.79	0.98	1.59	3.92	10.4	29.7	75.9	187.5
2001	9.9	5.9	0.25	0.11	0.16	0.53	0.80	0.97	1.56	3.89	10.0	28.0	74.0	186.4
2002	9.8	5.9	0.25	0.12	0.16	0.49	0.77	0.95	1.57	3.85	9.7	27.2	73.4	187.5
2003	9.8	5.7	0.25	0.11	0.14	0.46	0.95	0.91	1.58	3.81	9.6	26.3	72.8	190.4
2004	9.4	5.5	0.23	0.10	0.15	0.44	0.68	0.88	1.53	3.67	9.0	24.9	69.8	175.2
2005	9.3	5.7	0.23	0.10	0.14	0.42	0.64	0.82	1.51	3.59	8.9	24.0	67.4	171.6
2003 March	10.5	6.4	0.27	0.12	0.16	0.48	0.77	0.94	1.62	3.94	10.0	27.8	72.8	214.3
June	9.4	5.5	0.24	0.09	0.12	0.45	0.74	0.92	1.60	3.78	9.2	25.4	70.2	179.1
Sept	9.0	5.2	0.19	0.11	0.14	0.52	0.79	0.93	1.57	3.63	9.1	24.6	66.1	165.9
Dec	10.3	5.8	0.29	0.13	0.13	0.39	0.69	0.84	1.52	3.91	10.0	27.7	77.0	202.8
2004 March	10.2	5.9	0.25	0.12	0.15	0.46	0.67	0.92	1.59	3.81	9.4	26.6	76.9	199.3
June	9.1	5.2	0.23	0.12	0.14	0.39	0.74	0.94	1.58	3.72	8.8	24.5	66.9	164.0
Sept	8.7	5.3	0.23	0.10	0.18	0.46	0.71	0.86	1.47	3.58	8.5	23.2	64.5	154.8
Dec	9.5	5.5	0.23	0.08	0.11	0.43	0.58	0.78	1.49	3.58	9.2	25.4	70.8	183.0
2005 March	10.5	6.2	0.26	0.09	0.17	0.46	0.71	0.88	1.56	3.83	9.7	26.6	77.3	201.2
June	9.1	5.5	0.25	0.10	0.18	0.42	0.59	0.83	1.57	3.53	8.8	23.4	65.8	162.9
Sept	8.3	5.3	0.20	0.09	0.12	0.40	0.63	0.85	1.44	3.46	8.3	22.2	59.6	146.0
Dec	9.3	5.6	0.21	0.11	0.11	0.39	0.62	0.73	1.46	3.54	8.8	24.0	66.9	176.9
2006[2] March[p]	10.2	5.3	0.29	0.14	0.16	0.47	0.75	0.96	1.59	3.86	9.7	25.2	74.1	205.8
June[p]	9.0	5.5	0.24	0.09	0.15	0.45	0.69	0.88	1.57	3.59	8.8	23.0	63.5	158.9
Sept[p]	8.3	5.3	0.14	0.11	0.15	0.50	0.58	0.82	1.48	3.40	8.3	21.2	58.2	143.7
Females														
1976	11.8	12.2	0.46	0.24	0.21	0.35	0.40	0.56	1.46	4.30	10.1	26.0	74.6	196.6
1981	11.3	9.4	0.46	0.19	0.19	0.32	0.35	0.52	1.26	3.80	9.5	24.1	66.2	178.2
1986	11.4	8.0	0.40	0.17	0.17	0.29	0.33	0.47	1.12	3.24	9.2	23.4	62.5	169.4
1991	11.2	6.4	0.33	0.16	0.15	0.29	0.33	0.44	1.05	2.87	8.2	21.8	58.7	161.6
1996	11.0	5.3	0.25	0.10	0.12	0.29	0.31	0.46	1.04	2.63	7.1	20.6	55.8	158.9
1999	11.0	5.1	0.24	0.10	0.13	0.25	0.31	0.43	1.01	2.61	6.7	19.2	53.4	162.6
2000	10.5	5.1	0.20	0.10	0.11	0.25	0.30	0.44	1.00	2.62	6.4	18.1	50.8	155.2
2001	10.4	4.9	0.22	0.12	0.11	0.24	0.30	0.42	0.96	2.57	6.3	17.4	50.1	155.0
2002	10.4	4.5	0.20	0.10	0.11	0.24	0.27	0.44	0.94	2.54	6.0	17.0	50.4	159.4
2003	10.6	4.9	0.24	0.10	0.12	0.21	0.28	0.44	0.95	2.51	5.9	16.7	51.3	165.8
2004	9.9	4.6	0.20	0.09	0.10	0.22	0.27	0.42	0.93	2.39	5.7	15.8	48.6	154.3
2005	9.9	4.4	0.19	0.09	0.11	0.22	0.27	0.40	0.90	2.38	5.6	15.4	48.1	152.7
2003 March	11.4	5.3	0.26	0.09	0.09	0.19	0.33	0.48	1.00	2.59	6.1	17.6	54.8	184.6
June	10.0	4.8	0.24	0.09	0.17	0.22	0.25	0.43	0.90	2.58	5.8	16.1	49.3	153.6
Sept	9.6	4.5	0.20	0.12	0.10	0.21	0.30	0.43	0.97	2.38	5.6	15.3	46.8	147.6
Dec	11.2	5.2	0.26	0.09	0.10	0.24	0.25	0.40	0.94	2.49	6.2	17.8	54.3	177.5
2004 March	11.1	5.3	0.22	0.09	0.10	0.27	0.32	0.42	0.95	2.50	6.0	17.1	53.9	177.0
June	9.4	4.1	0.17	0.08	0.11	0.26	0.27	0.43	0.94	2.41	5.4	15.0	46.5	144.3
Sept	9.1	4.3	0.20	0.06	0.09	0.20	0.24	0.42	0.88	2.27	5.4	14.9	44.6	137.5
Dec	10.1	4.6	0.19	0.11	0.09	0.17	0.27	0.40	0.93	2.36	5.9	16.1	49.5	158.4
2005 March	11.6	4.8	0.22	0.09	0.13	0.20	0.32	0.46	0.95	2.57	6.0	17.3	57.0	184.7
June	9.5	4.7	0.20	0.10	0.10	0.25	0.27	0.37	0.97	2.31	5.5	15.0	46.6	144.2
Sept	8.7	3.9	0.14	0.06	0.09	0.20	0.24	0.36	0.86	2.32	5.4	13.8	42.0	129.7
Dec	9.8	4.2	0.19	0.08	0.11	0.22	0.24	0.41	0.84	2.31	5.6	15.3	46.8	152.7
2006[2] March[p]	11.0	5.0	0.25	0.07	0.07	0.24	0.32	0.39	1.01	2.45	6.2	16.4	51.9	180.5
June[p]	9.4	4.6	0.22	0.10	0.14	0.19	0.25	0.42	0.88	2.33	5.4	14.7	45.3	141.9
Sept[p]	8.5	4.2	0.18	0.10	0.08	0.23	0.23	0.36	0.90	2.24	5.2	13.6	40.9	124.8

Note: Figures represent the numbers of deaths registered in each year up to 1992 and the numbers of deaths occurring in each year from 1993 to 2005. Provisional figures for 2006 relate to registrations.

1 Rates per 1,000 live births.

2 Death rates for 2006 are based on the 2004-based population projections for 2006.

p provisional

Table 6.2 Deaths: subnational

Government Office Regions of England

Rates

Year and quarter	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East	London	South East	South West
Total deaths (deaths per 1,000 population of all ages)									
1996	11.7	11.7	11.2	10.7	10.7	10.3	9.4	10.7	11.7
1997	11.6	11.6	11.1	10.5	10.6	10.2	9.0	10.6	11.7
1998	11.9	11.7	11.2	10.8	10.6	10.2	8.8	10.4	11.4
1999	11.6	11.5	10.9	10.7	10.7	10.3	8.7	10.5	11.6
2000	10.8	10.7	10.3	10.0	10.3	9.9	8.2	9.8	11.3
2001	11.1	11.0	10.4	10.1	10.2	9.9	7.9	9.9	11.0
2002	11.2	11.0	10.5	10.2	10.2	10.0	7.8	9.9	11.1
2003	11.3	11.0	10.5	10.3	10.4	9.9	7.8	9.9	11.2
2004	10.9	10.5	10.1	9.7	9.8	9.5	7.2	9.4	10.4
2005	10.7	10.4	9.9	9.8	9.9	9.5	7.0	9.4	10.5
2004 March	11.8	11.6	11.2	10.7	10.8	10.5	8.0	10.4	11.6
June	10.6	10.0	9.6	9.3	9.5	9.2	7.0	9.1	9.9
Sept	9.8	9.7	9.3	9.0	9.0	8.8	6.6	8.7	9.5
Dec	11.2	10.6	10.3	9.9	10.1	9.6	7.4	9.6	10.7
2005 March	12.1	12.0	11.4	11.1	11.5	10.9	8.2	10.9	12.1
June	10.6	10.0	9.6	9.5	9.5	9.2	6.8	9.1	10.2
Sept	9.5	9.2	8.8	8.6	8.8	8.4	6.3	8.3	9.3
Dec	10.7	10.3	9.9	9.9	9.8	9.5	6.9	9.4	10.4
2006[1] March[p]	11.6	11.4	10.9	11.0	11.2	10.9	7.8	10.9	11.7
June[p]	10.7	10.3	9.8	9.6	9.7	9.4	6.7	9.1	10.1
Sept[p]	9.5	9.5	9.1	8.8	9.0	8.5	6.3	8.4	9.4
Infant mortality (deaths under 1 year per 1,000 live births)									
1996	6.2	6.3	6.5	6.3	6.8	5.3	6.3	5.3	5.5
1997	5.8	6.7	6.5	5.7	7.0	4.8	5.8	5.0	5.8
1998	5.0	6.3	6.9	5.6	6.5	5.0	6.0	4.4	4.8
1999	5.6	6.5	6.3	6.0	6.9	4.6	6.0	4.8	4.7
2000	6.5	6.2	7.3	5.4	6.8	4.4	5.4	4.4	4.7
2001	5.4	5.8	5.5	4.9	6.4	4.5	6.1	4.2	5.4
2002	4.8	5.4	6.1	5.6	6.6	4.3	5.5	4.5	4.3
2003	4.9	5.9	5.7	5.9	7.4	4.5	5.4	4.2	4.1
2004	4.6	5.4	5.8	4.9	6.3	4.2	5.2	3.9	4.5
2005	4.7	5.6	6.0	4.8	6.6	4.0	5.2	3.9	4.5
2004 March	5.9	6.1	6.1	4.8	6.9	4.9	5.7	4.5	5.0
June	4.6	4.9	5.8	4.8	5.6	4.0	4.6	3.3	4.8
Sept	3.1	5.3	4.9	4.3	7.0	4.3	5.0	3.5	4.2
Dec	4.8	5.3	6.3	5.6	5.6	3.5	5.5	4.5	4.2
2005 March	4.8	6.1	6.0	7.3	7.1	4.8	5.4	3.9	5.3
June	4.8	5.4	7.0	5.1	6.4	4.2	5.7	3.4	4.4
Sept	4.8	4.8	5.4	3.4	7.5	3.7	4.7	4.0	3.6
Dec	4.5	6.1	5.6	3.8	5.6	3.3	5.0	4.4	4.9
2006 March[p]	5.4	6.0	5.4	5.9	6.6	3.8	5.5	4.3	4.2
June[p]	6.4	5.5	6.1	5.0	7.0	4.3	4.5	4.2	3.8
Sept[p]	5.3	5.2	4.9	5.2	6.8	3.5	4.7	4.2	3.6
Neonatal mortality (deaths under 4 weeks per 1,000 live births)									
1996	4.1	4.0	4.2	4.2	4.9	3.5	4.4	3.5	3.8
1997	3.7	4.3	4.4	3.7	5.0	3.3	3.7	3.4	3.9
1998	3.1	4.1	4.5	3.7	4.8	3.4	4.1	2.9	3.3
1999	4.1	4.4	4.1	4.3	4.8	3.0	4.1	3.2	3.2
2000	4.4	4.3	5.0	4.1	5.0	3.0	3.7	3.1	3.0
2001	3.5	3.8	3.2	3.4	4.4	2.9	4.1	2.9	3.7
2002	3.2	3.6	4.0	4.0	4.8	2.9	3.6	2.9	3.1
2003	3.2	4.1	4.0	4.2	5.1	3.0	3.7	2.8	2.9
2004	2.8	3.6	3.8	3.5	4.7	2.9	3.6	2.8	3.2
2005	2.9	3.8	4.0	3.5	4.9	2.6	3.4	2.7	3.2
2004 March	3.7	3.5	4.0	3.5	5.3	3.4	3.9	2.7	3.8
June	3.2	3.4	4.0	3.6	4.2	3.1	3.1	2.5	2.9
Sept	1.4	3.8	3.2	3.3	5.5	3.0	3.5	2.6	3.0
Dec	2.8	3.5	4.1	3.6	3.9	2.1	3.6	3.2	3.1
2005 March	3.3	3.9	4.3	5.1	4.9	2.9	3.2	2.8	3.5
June	3.0	3.5	4.3	3.7	4.9	3.0	3.8	2.1	3.2
Sept	2.7	3.1	3.9	2.8	5.7	2.7	3.5	2.9	2.7
Dec	2.8	4.6	3.5	2.4	4.1	1.8	3.0	3.1	3.5
2006 March[p]	4.1	3.8	4.0	4.2	4.7	2.7	3.3	2.9	3.2
June[p]	4.0	3.8	4.2	3.9	5.1	3.1	3.2	2.6	2.4
Sept[p]	3.5	3.5	3.3	3.8	5.5	2.4	3.3	2.9	2.6
Perinatal mortality (stillbirths and deaths under 1 week per 1,000 total births)									
1996	9.2	8.6	8.3	8.7	10.2	7.5	9.6	7.8	7.5
1997	8.0	8.9	8.3	7.7	9.6	7.3	9.0	7.3	8.7
1998	8.2	8.7	9.2	8.0	9.3	7.4	9.0	6.8	7.3
1999	8.2	8.7	8.3	7.8	9.9	7.0	9.0	6.9	7.8
2000	8.5	8.6	9.6	7.8	9.6	7.1	9.0	6.6	6.6
2001	7.8	8.7	7.5	7.9	9.1	7.1	8.9	6.9	7.2
2002	8.1	8.5	9.0	8.5	10.0	7.5	9.3	6.9	6.8
2003	7.8	9.0	9.1	9.5	10.2	7.3	9.6	7.0	7.0
2004	7.9	8.4	9.4	8.1	9.6	7.6	9.3	7.0	7.2
2005	7.8	8.2	9.4	7.6	9.9	6.4	8.5	6.8	6.8
2004 March	9.6	8.2	9.4	8.4	10.1	8.0	9.3	7.2	6.6
June	9.1	8.3	9.4	8.5	9.2	7.4	9.0	6.9	7.5
Sept	6.8	8.3	9.8	8.2	10.3	7.7	9.6	7.0	8.1
Dec	6.2	8.8	9.0	7.2	8.8	7.2	9.3	7.1	6.6
2005 March	6.6	8.4	9.7	9.3	9.0	6.9	8.4	6.7	6.8
June	9.2	8.2	10.4	7.6	10.9	7.4	8.8	6.5	7.5
Sept	7.1	7.4	8.6	7.2	11.0	6.1	8.9	7.1	5.7
Dec	8.4	8.9	9.0	6.5	8.8	5.3	7.9	7.0	7.1
2006 March[p]	8.0	7.9	7.1	8.6	9.6	7.1	8.3	7.3	6.5
June[p]	8.7	7.9	8.5	9.1	10.1	6.9	7.8	6.5	6.7
Sept[p]	7.3	7.3	8.1	8.4	9.5	6.3	7.8	6.4	6.2

Note: Figures represent the numbers of deaths occurring in each year with the exception of provisional figures for 2006 which relate to registrations.
1 Total deaths rates for 2006 have been calculated using the mid 2005 population estimates published on 24 August 2006.
p provisional.

Table 6.3 Deaths: selected causes (International Classification)[1] and sex

England and Wales

Number (thousands) and rate for all deaths and age-standardised rates per million population for selected causes

Year and quarter	All deaths		All causes (age - standardised rates per million population[2])	Malignant neoplasms									
	Number (thousands)	Crude rate per 100,000 population		Oesophagus	Stomach	Colon	Rectosigmoid junction, rectum, and anus	Trachea, bronchus and lung	Melanoma of skin	Other malignant neoplasms of skin	Breast	Cervix uteri	Ovary
			A00–R99 V01–Y89	(C15)	(C16)	(C18)	(C19–C21)	(C33–C34)	(C43)	(C44)	(C50)	(C53)	(C56)
Males													
1971	288.4	1,207	13,466	76	317	187	144	1,066	10	12	4	:	:
1981	289.0	1,196	12,189	90	251	181	135	1,028	17	9	3	:	:
1991	277.6	1,125	10,291	117	185	194	117	842	23	10	3	:	:
1998	264.7	1,064	8,981	129	132	169	95	643	26	8	3	:	:
1999	264.3	1,044	8,862	127	127	161	90	611	27	7	2	:	:
2000	255.5	1,005	8,437	128	118	158	89	592	28	7	2	:	:
2001	252.4	987	8,188	129	111	155	89	570	26	7	3	:	:
2002	253.1	985	8,074	131	109	150	90	559	27	8	3	:	:
2003	253.9	982	7,985	134	101	145	90	538	28	8	2	:	:
2004	244.1	939	7,535	129	95	142	91	520	30	9	2	:	:
2005	243.3	929	7,337	132	92	137	92	513	28	8	2	:	:
2004 March	66.2	1,024	8,194	130	95	145	86	518	27	10	3	:	:
June	58.8	909	7,311	122	98	142	90	511	30	8	2	:	:
Sept	56.8	869	6,989	128	93	142	98	513	30	8	2	:	:
Dec	62.4	955	7,651	136	93	141	91	539	31	11	1	:	:
2005 March	67.8	1,050	8,251	134	92	139	91	528	29	7	3	:	:
June	59.1	906	7,158	135	95	131	94	489	27	7	2	:	:
Sept	55.1	834	6,624	130	95	134	89	499	27	8	3	:	:
Dec	61.3	929	7,333	130	87	145	94	538	28	8	2	:	:
2006[3] March[p]	66.4	1,022	7,908	131	81	133	98	519	32	7	2	:	:
June[p]	59.3	902	6,987	132	82	127	86	501	30	7	2	:	:
Sept[p]	55.2	830	6,490	127	81	132	85	493	29	7	1	:	:
Females													
1971	278.9	1,104	8,189	40	149	176	79	183	14	6	379	83	126
1981	288.9	1,134	7,425	42	111	157	74	252	16	5	405	69	121
1991	292.5	1,122	6,410	50	74	146	61	300	18	4	401	54	118
1993	299.2	1,142	6,427	52	66	138	53	296	22	3	378	47	115
1994	285.6	1,088	6,115	51	67	136	52	296	22	4	371	42	114
1995	295.2	1,121	6,206	52	62	131	49	294	20	4	361	42	116
1996	291.5	1,105	6,068	52	55	126	49	293	20	3	344	41	121
1997	290.4	1,098	6,001	51	57	122	48	285	20	3	337	37	115
1998	290.3	1,108	5,945	49	54	117	47	291	21	3	328	35	116
1999	291.8	1,097	5,929	52	51	115	46	289	20	3	319	33	111
2000	280.1	1,049	5,655	51	48	107	45	285	21	3	311	33	109
2001	277.9	1,038	5,543	48	46	103	45	283	20	3	308	31	112
2002	280.4	1,044	5,526	51	44	104	44	284	19	3	302	29	112
2003	284.4	1,055	5,578	50	42	98	46	285	20	3	293	27	108
2004	268.4	992	5,259	48	42	96	47	284	19	3	285	27	102
2005	269.4	990	5,188	48	39	96	46	290	21	3	284	26	102
2004 March	74.4	1,105	5,795	51	38	97	46	292	21	3	287	28	105
June	63.4	942	5,022	46	41	94	47	265	18	4	284	25	97
Sept	61.8	908	4,863	50	43	95	45	281	19	3	276	27	102
Dec	68.9	1,013	5,359	46	44	100	49	299	20	2	293	28	101
2005 March	77.9	1,162	5,974	50	41	92	47	290	20	4	292	26	101
June	64.7	953	5,033	45	36	96	47	288	22	4	281	27	105
Sept	59.6	868	4,629	50	40	102	43	283	20	3	281	26	99
Dec	67.2	979	5,133	47	39	95	45	300	20	3	281	24	104
2006[3] March[p]	74.4	1,104	5,662	48	40	90	45	308	16	4	296	26	104
June[p]	64.3	943	4,899	46	34	89	46	293	18	4	265	22	101
Sept[p]	58.8	852	4,518	47	32	99	44	287	19	3	270	23	95

Note: Figures represent the number of deaths registered in each year up to 1992 and the number of deaths occurring in each year from 1993 to 2005. Provisional figures for 2006 relate to registrations.
The rates by cause of death in this table are based on final underlying cause. For further details see the Explanatory Notes in the 'Report: Death registrations in England and Wales, 2004: causes' in HSQ26.

1 The Ninth Revision of the International Classification of Diseases, 1975, came into operation in England and Wales on 1 January 1979. The Tenth Revision of the International Classification of Diseases, 1992, came into operation in England and Wales on 1 January 2001. The cause descriptions and codes relate to ICD-10. For changes to this table see 'In Brief', Health Statistics Quarterly 14.
2 Directly age-standardised to the European Standard Population. See Notes to Tables.
3 Death rates for 2006 are based on the 2004-based population projections for 2006.
p provisional

Table 6.3 continued **Deaths: selected causes (International Classification)[1] and sex**

England and Wales

Age-standardised rates[3] per million population for selected causes

Malignant neoplasms													
Prostate	Bladder	Leukaemia	Diabetes mellitus	Ischaemic heart disease	Cerebro vascular diseases	Pneumonia	Bronchitis, emphysema and other chronic obstructive pulmonary disease	Asthma	Gastric and duodenal ulcer	Diseases of the liver	Land transport accidents	Intentional self-harm and events of undetermined intent with inquest verdict 'Open'	Year and quarter
(C61)	(C67)	(C91–C95)	(E10–E14)	(I20–I25)	(I60–I69)	(J12–J18)	(J40–J44)	(J45–J46)	(K25–K27)	(K70–K76)	(V01–V89)	(X60–X84, Y10–Y34)	
													Males
198	124	74	82	3,801	1,541	920	944	21	107	41	209	124	1971
214	121	74	82	3,664	1,141	1,053	683	28	90	58	119	151	1981
304	121	77	131	2,984	940	391	606	31	73	76	125	160	1991
277	99	67	94	2,215	706	720	463	18	60	115	86	152	1998
272	93	67	94	2,095	673	770	474	18	64	119	86	151	1999
260	92	67	88	1,959	622	735	416	17	59	119	86	141	2000
274	93	70	94	1,872	690	388	403	16	55	139	86	134	2001
271	90	68	91	1,782	690	387	396	15	56	144	83	131	2002
272	87	71	91	1,700	661	407	411	14	53	157	84	129	2003
266	84	67	82	1,562	594	359	363	15	50	151	77	125	2004
255	80	67	79	1,466	553	351	367	12	46	156	75	118	2005
279	86	67	91	1,708	692	465	463	15	54	149	69	137	2004 March
258	82	63	80	1,538	571	332	338	13	49	144	90	133	June
260	88	70	74	1,418	519	278	293	17	44	145	79	127	Sept
267	81	66	85	1,584	594	361	360	14	52	166	71	103	Dec
264	85	67	93	1,673	644	498	489	14	55	167	75	132	2005 March
250	80	65	75	1,442	534	326	356	13	45	149	77	122	June
248	76	65	67	1,289	483	246	270	9	42	144	82	115	Sept
259	78	70	81	1,463	552	339	356	12	43	163	66	104	Dec
256	79	73	85	1,538	610	434	439	11	52	158	83	128	2006[3] March[P]
249	80	63	75	1,344	505	317	350	10	47	163	88	118	June[P]
239	82	66	66	1,200	451	240	270	11	41	157	75	111	Sept[P]
													Females
:	32	47	89	1,668	1,352	624	193	25	44	31	82	84	1971
:	35	47	66	1,601	1,012	740	155	30	57	43	41	81	1981
:	34	44	95	1,407	812	325	211	30	46	49	45	51	1991
:	34	43	74	1,347	724	585	224	27	46	49	35	48	1993
:	35	42	69	1,237	689	512	204	24	44	50	34	44	1994
:	33	41	73	1,194	690	568	229	24	42	55	30	47	1995
:	32	41	67	1,140	680	548	222	21	43	57	30	45	1996
:	31	43	66	1,074	651	574	227	23	42	61	29	45	1997
:	32	41	65	1,055	645	546	226	22	41	64	28	43	1998
:	30	45	65	986	629	591	241	22	39	67	28	45	1999
:	31	39	62	907	577	546	216	20	41	68	24	45	2000
:	29	41	62	878	620	307	220	19	39	77	23	40	2001
:	30	43	65	844	617	316	224	20	37	79	24	41	2002
:	30	39	66	811	606	337	244	20	36	81	24	41	2003
:	28	40	60	738	550	297	214	18	35	83	21	41	2004
:	28	39	57	686	519	298	224	17	32	81	22	38	2005
:	27	43	69	806	626	399	283	23	37	84	25	46	2004 March
:	30	39	54	720	530	254	184	16	33	80	21	42	June
:	28	39	55	674	496	227	167	14	32	80	19	42	Sept
:	28	39	63	750	550	307	221	18	37	86	20	36	Dec
:	30	43	65	806	605	453	320	24	36	88	26	40	2005 March
:	29	40	54	674	496	261	207	17	32	74	20	43	June
:	27	35	50	600	462	199	157	12	28	75	21	38	Sept
:	25	40	58	665	514	281	213	16	31	85	21	33	Dec
:	29	42	60	734	553	373	282	19	37	87	24	40	2006[3] March[P]
:	27	34	55	638	477	260	213	16	27	85	26	36	June[P]
:	29	34	50	560	426	186	161	13	27	85	20	40	Sept[P]

See notes opposite.

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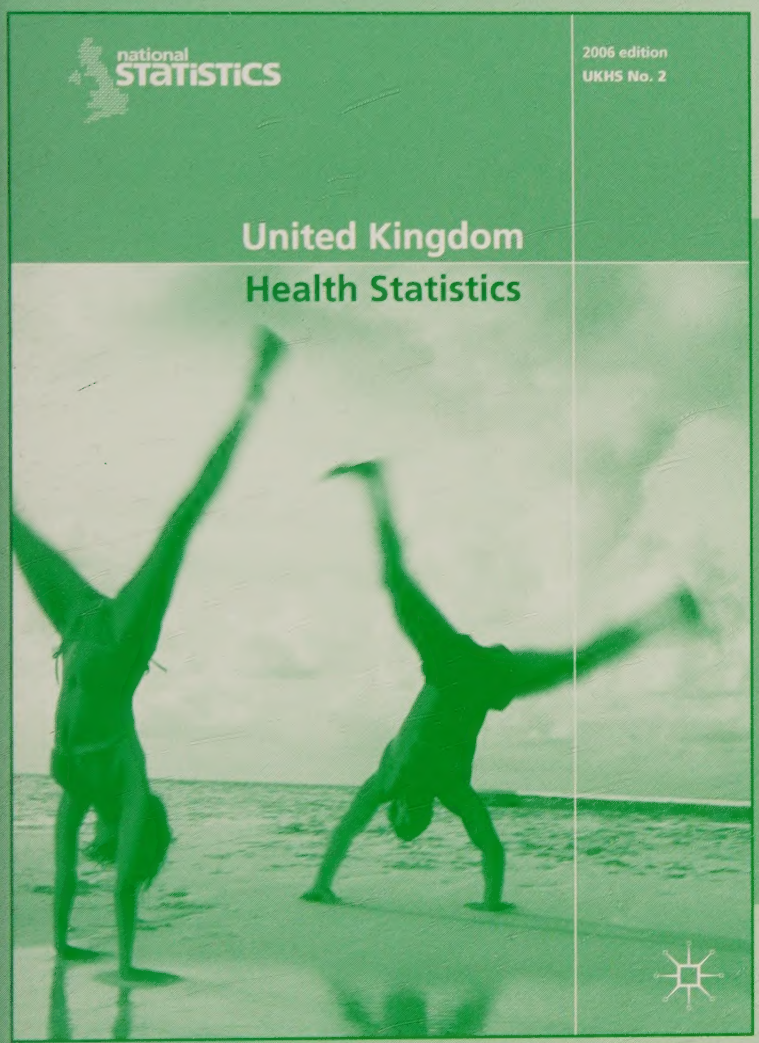

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